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Factors Influencing Retention of Non-Traditional Undergraduate Students and Effective Retention Strategies

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APPROVAL OF DISSERTATION

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ABSTRACT

A vast amount of literature exists on the topic of college student retention. However, there is still much to be learned about the process a student goes through to decide whether to stay in school or depart at an early stage without accomplishing the intended goal of completing a college education

Most of the research that has been done in the area of student retention has been geared to a homogeneous group of students abstractly referred to as the traditional college student. Since the number of studies about non-traditional students has been limited, the focus of this research was to study the non-traditional student, the adult student who tries to balance school, work and family responsibilities to the best of his or her ability. In particular, the purpose of this quantitative, experimental research study was to determine if academic integration, social integration, and socio-demographic characteristics have a significant influence on college student retention.

A quantitative, experimental research design was conducted to answer research questions and to test the hypotheses. Also, an exploratory study was performed to investigate the relationship among socio-demographic characteristics, academic and social integration, and retention of non-traditional students. The target population for this study consisted of a convenient sample of all eligible degree-seeking incoming freshmen students starting at the University during the first month of the summer and the first month of the fall semester of the 2007 academic year. Upon approval by IRB, all incoming degree-seeking freshmen students for a given month were randomly assigned during the process of registration to the experimental or to the control groups. A total of 95 students participated in the study. Data was analyzed using SPSS version 14.0.

To answer Research Questions and Hypotheses, descriptive statistics of variables, including Chi-Square tests and ANOVA, regression analyses, including correlational and step-wise regressions, were utilized.

There are two implications derived from this study. The first implication of this study indicates that social integration is paramount in the student's decision to stay in school. The environmental influence, according to Bean and Metzner (1985), is more important than the academic variables for non-traditional students. The second implication of this study indicates that certain retention strategies could be set in place to help those students identified with specific socio-demographic characteristics in pre-enrollment data. The research found that four factors, student's age group, native language spoken at home, parents' educational level, and the number of hours the students worked daily, were constant predictors that impact student retention. The results of this study can be used as a baseline for future studies to learn more about the factors that influence retention of non-traditional undergraduate students for the benefit of the students, schools and society as a whole.

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CHAPTER I

INTRODUCTION TO THE STUDY

Introduction and Background to the Problem

According to the National Center of Educational Statistics (NCES), only 51 percent of students enrolled in five-year bachelor's degree programs complete their degrees (U.S. Dept. of Education, NCES, 2005). This means that 49 percent of college students leave school prematurely without completing their degrees. College students encounter many issues that influence them to precipitately drop out of college. Some of these issues encompass poor academic performance, unclear educational aspirations, lack of college readiness, as well as time and financial constraints (Bean, 1985, 1990; Bers & Nyden, 2000-2001; Oseguera, 2005-2006, Pizzolato, 2004).

Poor academic performance, unclear educational aspirations, and college readiness seem to affect non-traditional students more severely than traditional students. Non-traditional students or adult learners are typically 25 years or older, may have children, may or may not be single parents, may be married, may work full or part time and may be the sole supporters of their families (King, Anderson & Corrigan, 2003). Such pressures can make these non-traditional students more vulnerable to withdrawing from school because of the many responsibilities surrounding them. Freshmen students, especially non-traditional students, may lack the family support and mentorship that is so necessary in attaining college success. Some researchers believe that second and third college generation students are more likely to succeed in school than those who are first generation college students (Cliff,

2003; Lohfink & Paulsen, 2005). This is particularly important to freshmen college students. A college student whose parents and/or family members possess college experience may be provided with expectations of what college is all about through role modeling and encouragement. Providing students with the support they need may mean the difference between graduating or prematurely withdrawing from college. According to Bean and Metzner (1985), environmental variables are more important to non-traditional students than other variables the students might be exposed to while in college.

Time and financial constraints are factors that affect students, especially non-traditional students, as they try to manage work, family and school responsibilities. For the non-traditional student this becomes a challenge that potentially may lead to a decision to depart college at an early stage. Predicting retention and withdrawal behaviors of college students has generated much scholarly research to find out the driving force that causes a student to withdraw from college before graduation.

For decades researchers such as Tinto (1987), Astin (1985), Bean (1990), and Bean and Metzner (1985), have devoted much time and effort to developing student retention strategies and to identifying factors that may influence retention of college students. These researchers have designed theories and models to help institutions of higher learning understand why students withdraw from school prior to graduating and to help these institutions develop strategies to prevent this early withdrawal from happening in the first place.

Tinto's (1987) theory is based on the premise that social and academic integration of college students will enhance the chances of students' staying in

school. Tinto's theory identifies five major constructs. 1) pre-entry attributes, 2) goal commitments, 3) institutional experiences, 4) personal/social integration, and 5) academic integration (Tinto, 1987). Tinto's model is centered on the idea of student integration and how the student fits into school (Draper, 2003). This theory proposes that when social and academic integration is achieved, students increase their chances of staying and succeeding in school because the students feel a sense of belonging. Attaining this sense of belonging enhances student retention through interaction with peers as well as faculty and staff members. The major determinants of Tinto's (1987) theory are family background, skills and abilities, prior schooling, student intentions, goals, commitments, extracurricular activities, peer groups, faculty and staff interactions, and academic performance. Each one of these propositions plays a very important role in the students' decision to stay or withdraw from school.

Bean (1990) expanded on Tinto's theory by introducing his seminal student attrition model, and he identified six major constructs that included internal and external variables surrounding the student that might affect the student's decision to stay or leave school. These encompass: 1) background factors, 2) organizational factors, 3) academic integration, 4) social integration, 5) environmental pull, and 6) attitudes and other outcomes (Bean, 1990).

Bean (1990) developed a model depicting the relationship between these constructs that were then subdivided between internal and external variables affecting a student's decision to withdraw or remain in school. These constructs included educational goals and commitment to stay in school, school preparedness, family support, financial support, class schedules, student services support, absenteeism,

social integration with peers and faculty, family commitments, and self determination (Bean 1990). Bean's student attrition model is of significance to the study of retention in higher education because it includes both academic and social integration components (Hossler & Bean, 1990).

Astin (1985) is also a leading researcher in the study of student retention in higher education. His work on student retention is perhaps the most widely adopted model across institutions of higher learning, as it is socially significant in addressing essential issues about student retention (Rendon, Jalomo, & Nora, 1999). Astin's theory of involvement does not only encompass the social involvement and the interaction the student has with faculty and staff, but it also involves resources available to the student throughout the college, extra curricular activities and peer involvement (Fernando, 2005). Astin's involvement theory is student centered (Astin, 1985). Astin stated, "Quite simply, student involvement refers to the amount of physical and psychological energy that the student devotes to the academic experience" (Astin, 1985, p. 134).

Astin's (1985) involvement theory identifies five factors that impact student retention. First, Astin (1985) proposes that the student invests physical and psychological energy in school. Second, student involvement is represented at different levels depending upon the activity or event. Third, student involvement could be both qualitative and quantitative in nature. Fourth, student learning has a direct correlation with the student's involvement in school. Fifth, school policies are enforced positively when there is a direct student involvement and acceptance (Astin, 1985). Astin's theory continues to be examined today as it is considered to be

relevant to student retention in higher education (Rendon, et.al., 1999). Tinto (1997) stated that students who are actively involved in school stay in school. Astin's school involvement theory includes both academic and social interaction.

The preponderance of the research done by Tinto (1987), Astin (1985), and Bean (1990) on student retention has dealt with traditional students. Bean and Metzner (1985) began to conduct research that included the non-traditional student. This was prompted by the rise in enrollments of non-traditional students in community colleges. The increase in enrollments of non-traditional students in community colleges began after World War II, with over 600 of these colleges being formed in the 1960's (Bean & Metzner, 1985). Many four-year colleges have made the scheduling of classes more flexible and appealing to accommodate the demands of the non-traditional student to include night and weekend classes, satellite campuses, and distance education (Bean & Metzner, 1985).

In the mid-1980's, Bean and Metzner (1985) introduced their seminal model of non-traditional undergraduate student attrition with the objective of understanding the implications of non-traditional student enrollment and factors affecting non-traditional student attrition rates. This theory identifies four constructs. The first is academic performance. Students who perform poorly would be expected to drop out at a faster rate than those students with higher GPA's. The second construct is student commitment. Students who are not committed to the institution or their studies will make the decision to leave the institution at a faster rate than those students who are committed to stay. The third construct is student background. These refer specifically to previous high school grades and educational goals. The

fourth group of constructs refers to environmental influence. Environmental influence, according to Bean and Metzner (1985), is more important than the academic variables for non-traditional students. There is a strong correlation between environmental and academic support variables for staying in school. When these two are high, students tend to stay in school. When these variables are low, the chances of the student leaving school tend to be higher.

Bean and Metzner (1985) also noted that when the environmental support is low, the student will leave school even when the academic support is present. However, when the student experiences high environmental support, even if the academic support is low, the student will tend to remain in school. If a student is having personal needs, for example baby-sitting or financial issues, the student will tend to leave school sooner. Students who are encouraged by family, friends and employers will tend to persist in staying in school even when their educational goals are not clear or they are not getting educational support. Bean and Metzner stated, "non-academic factors compensate for low levels of academic success, while high levels of academic achievement only result in continued attendance when accompanied by positive psychological outcomes from school" (1985, p. 492).

Bean & Metzner (1985) pointed out that little research has been conducted as it pertains to student retention of non-traditional students. Future research about non-traditional students is needed and it should (1) include external environmental variables, (2) contain multivariate research models, and (3) not be based solely on social integration, (Bean & Metzner, 1985).

Purpose

The purpose of this research was to study the effects that academic and social integration have on non-traditional student retention. To achieve this objective, a quantitative, experimental research design was conducted. Also, an exploratory study was performed to investigate the relationship that socio-demographic, academic and social integration factors have on the retention of non-traditional students.

Definition of Terms

Independent Variables

Two independent variables were investigated for this research study, academic integration and social integration. Their theoretical and operational definitions follow.

Academic Integration

Theoretical Definition. Academic integration refers to academic performance. Students feel academically integrated through the bonding with their instructors and classmates. According to Tinto (1987), students who feel academically integrated in school are more likely to remain in school. Positive interactive experiences in school will enhance the desire to remain in school (Tinto, 1987, 1993).

Operational Definition. Academic integration was measured by the grades obtained in first year freshman courses either the Strategies for Success or Psychology course and by the responses given by the students through the Institutional Integration Scale. The Strategies for Success course is an undergraduate college level course that "addresses persistence and high achievement skills to enable

students to establish foundations upon which to build in college and later in the business world" (Keiser University Catalog, 2007-2008, p. 232). Some of the topics covered are: listening and note-taking, test taking, critical thinking, time management, improving memory skills, etc. (Ferrett, 2006). The Psychology course is an undergraduate college level course that "introduces terms and concepts dealing with basic psychological research methods, human and animal behavior, life-span development, states of consciousness, learning, memory, intelligence, motivation, personality structure, stress and coping, etc." (Keiser University Catalog, 2007-2008, p. 233). These classes cover student skills that will enhance student performance in college. Skills will be tested in the form of pre/post test exams, quizzed, mid- term and final exams. A minimum passing grade of "D" is required to successfully complete these courses.

Social Integration

Theoretical definition. The faculty-student mentoring program aims at strengthening the academic and social integration of students while in college. A faculty-student mentoring relationship is "likely to engender positive self-perceptions in at-risk students, feelings of self-efficacy, personal control, respect for oneself and a sense of being valued and respected by significant others" (Santos & Reigada, 2004-2005, p. 340).

Operational definition. Social integration was measured through the Institutional Integration scale to assess the quality of the faculty-student mentoring program that was aimed at strengthening the academic and social integration of students while in college. The faculty mentor acted as an academic advisor by reviewing the overall

academic progress of the student, mid-point grades, final grades, and the schedule of future classes. The mentor also filled out the academic advisement form (Appendix A). In addition, the faculty mentor met with the student or had communication with the student via phone or e-mail at least once a week to discuss the student's social adjustment to college.

Dependent Variable

One dependent variable was investigated for this research study. Its theoretical and operational definition follow.

Retention

Theoretical definition. Retention is defined as "continued student participation in a learning event to completion, which in higher education could be a course, program, institution, or system (Berge & Huang, 2004, p. 3).

Operational definition. Retention rate is defined as "a measure of the rate at which students persist in their educational program at an institution, expressed as a percentage . . .this is the percentage of first-time degree/certificate-seeking students from the previous fall who are again enrolled in the current fall" (NCES, IPEDS Glossary, n.d. p. 59). For this study, retention was a categorical variable that was measured at the end of four months, which was equal to a semester at this institution. This categorical variable indicated whether the students returned or did not return to college the following semester.

Secondary Variables for Exploratory Studies

The availability of socio-demographic data about students allowed the researcher to conduct exploratory studies to try to understand the relationship between socio-demographics and rate of retention of non-traditional students. Socio-demographic data was recorded by means of a survey developed by the researcher (Appendix A). A student's recordkeeping tracking information was retrieved from C2K—school's database to record the students' academic characteristics such as high school diploma or GED completion, possibly high school GPA, Wonderlic, the University's entrance test, and major.

Justification

The review of the literature presented here has pointed to two major constructs: (1) academic, and (2) social integration and their impact on retention. Most of the data about student retention has been gathered in non-experimental fashion and on many occasions obtained from secondary sources. Although the findings from the studies in the review of the literature are of great value, there is a need to conduct experimental studies that will clearly identify the impact of these two constructs on retention. Therefore, the present study attempted to fill that gap. As a first step, it looked at only two variables—one for academic integration and one for social integration and their impact on retention. Also, the data gathered from students' responses to demographic and academic characteristic surveys was utilized for conducting secondary exploratory analysis which served as the basis for future exploratory studies.

The justification of the study is the contribution that it will provide to the field of higher education as it pertains to the factors that influence retention of non-traditional students. The topic of student retention in higher education is researchable and feasible. The preponderance of student-retention research done to date has dealt with traditional students. Therefore, the findings of this study will fill the gap from previous studies by involving non-traditional students and providing a significant contribution to the literature.

This study was researchable because it posed quantifiable research questions that were answered through the research study. The research was feasible because the constructs could be operationalized with variables that could be measured and statistically analyzed. In addition, the sampling plan was feasible for the study. There was a viable source of participants for the study, and the amount of time allotted to the study was adequate.

Scope of the Study

The scope of this study, by necessity, abides by the parameters already established by the University where this research took place, namely:

- University policy requires all incoming students to be at least 18 years of age.
- Participants are predominantly non-traditional students.
- Target population for this study consisted of all incoming freshmen students entering the University during the first month of the Summer 2007 semester and the first month of the Fall 2007 semester.
- Each semester at the University consists of four months.

- Every month, the University allows students to start classes. Every month, a new group of students were randomly assigned to either the experimental group or the control group.
- Academic advising is provided to all students once a semester for the purpose of retention.

CHAPTER II

LITERATURE REVIEW, THEORETICAL FRAMEWORK, RESEARCH QUESTIONS, AND HYPOTHESES

Introduction

Review of the Literature

Chapter II reviews and analyzes the theoretical and empirical literature to examine factors associated with retention of non-traditional undergraduate college students, to identify effective retention strategies, and to identify areas of future scholarly inquiry. Its main focus was to review, analyze and understand the factors that influence students to stay in school or to leave before completing their studies. Conclusions from the review are: (1) academic and social integration play an important part in student persistence (Tinto, 1987, 1993); (2) there is a need for more studies involving non-traditional students in order to validate present theories (Bean & Metzner, 1985); (3) there are limitations in previous studies due to samples being too small or homogeneous (Bean & Metzner, 1985).

Retaining undergraduate students in college is a result of many factors. Findings of the annual survey of 1,450 institutions reported by the American College Testing (ACT), an independent, not-for-profit educational assessment organization, shows the average five-year bachelor's degree completion rate to be 51% in 2000 (U.S. Department of Education, National Center for Educational Statistics [NCES], 2005, p. 156). The factors that lead students to withdraw from school encompass multiple reasons. Some of these reasons include (1) poor academic performance, (2)

wrong major, (3) being under prepared, and (4) financial hardships (Bean, 1990; Pizzolato, 2004).

More than half of the nation's college students make up a pool of students called non-traditional or adult learners (King, Anderson & Corrigan, 2003). Non-traditional students or adult learners are typically 25 years or older, may have children, may or may not be single parents, may be married, may work full or part time jobs and may be the sole supporters of their families (King, Anderson & Corrigan, 2003). Non-traditional students or adult learners are ethnically and demographically diverse. They have many responsibilities that may include family, children, jobs and school. However, they also have a clear picture of what they would like to do with their lives—earn a college degree, get a better paying job, and provide a better life for their families. Non-traditional students, once the minority, are considered to be in the majority today (King, Anderson & Corrigan, 2003). This increase in school enrollments of nontraditional students has multiple causes. On the one hand, the community college sector increased following World War II (Bean and Metzner, 1985). Furthermore, awareness of the need for continuing education rapidly grew, which led to an increase in the number of college student enrollments (Kember, 1999). On the other hand, projections forecasting that fewer students aged 18 to 23 years old would be entering college caused school administrators to increase enrollment of nontraditional students to replace the traditional student body and maintain institutional success (Bean and Metzner, 1985).

Retaining students in college until graduation places a tremendous responsibility on college administrators. Most colleges attempt to identify factors

affecting student retention and graduation because the problem of student withdrawal from college affects everyone. It may be caused by multiple factors, such as, education, demographic, economic, social, health or a combination of those. However, the characteristics and demographics of the individual undergraduate student also play a key role in the retention/withdrawal pattern of students. The students' demographic variables, such as age, marital status, social background, working status, race, ethnicity, gender, and/or a combination of these, are possible contributors to the withdrawal/retention and graduation of students. As stated by Braxton and McClendon, "the departure of students from colleges and universities remains a nettlesome problem for the management of the enrollments of colleges and universities" (2001-2002, p. 57).

There are other reasons that lead students to withdraw from school. Some of these reasons include (1) poor academic performance, (2) poor academic integration, (3) wrong major, (4) insufficient faculty contact, (5) poor institutional fit, (6) under preparedness, or (7) financial hardships (Bean, 1985). Further studies on personality traits, such as aggression, career decidedness, optimism, self-directed learning, sense of identity, tough-mindedness and work drive, have been linked as factors contributing to a student's intention to withdraw from school (Lounsbury, Saudargas & Gibson, 2004).

Retention of college students has been a topic of discussion for decades among members of academia. In an effort to minimize the percentage of students who do not return to school, college officials are constantly developing retention strategies that might help them improve student retention in their schools. These

retention strategies vary in sophistication and time devoted to them that is contingent upon the retention coordination efforts of each school. Academic advising is one of the most useful tools in a retention campaign (Culver, 2005). Academic advisors are able to meet with their students to review student progress, discuss grades, career goals, and any other issues that might be affecting the academic standing of the student (Lowe & Toney, 2000-2001). Academic advising also serves as a bridge between the student and the faculty member so that they get acquainted and the student feels that someone cares enough to spend time discussing present and future goals. This is also a good opportunity to discuss any issues the student might be having outside the realm of the classroom.

The Student Affairs Department also plays an important role in the student's life while in college. Through the Student Affairs Department, students gain access to the social integration that is so crucial in the retention of students while they attend college. Student Affairs provides student support services that encompass tutoring, counseling, peer mentoring, and faculty mentoring (Grant-Vallone, Reid, Umali, & Pohlert, 2003-2004). All of these services generate faculty and staff involvement that is vital for student retention. Offering seminars, such as the first year seminar, also plays an important part in the school's retention strategies. These retention strategies, if implemented successfully, promote increased retention of college students (Grant-Vallone et al., 2003-2004).

Retention of Traditional Students

Models and Theories

Retention of students has been an important research topic for educators and college administrators at the national and international level for decades. Many sociologists have tried to explain student departures, and this subject continues to be of great concern not only to institutions, administrators, and staff, but also to students, employers, and government as well. Sociologists have proposed many theories based on psychological models and individual abilities (Tinto, 1987). Tinto (1987), along with Astin (1985), and Bean and Metzner (1985), represents some early pioneers of retention strategies in higher education. These retention pioneers have led the way in terms of the research being done in the area of student retention today. The models and theories designed by Tinto, Astin, Bean and Metzner have advanced the thinking on how to promote student retention. Institutions of higher learning have incorporated many of the principles outlined in these retention theories and models in order to improve retention rates. The theories and models designed by these researchers are important in establishing retention practices to increase graduation rates at institutions of higher education.

Tinto's (1987) Longitudinal Model of Individual Departure (1987). One of the most important retention theories is Tinto's (1987) seminal theory of Longitudinal Model of Individual Departure. Tinto's model "is an interactive model of student departure which describes and explains the longitudinal process by which individuals come to leave institutions of higher education" (1987, p. 112). Tinto uses a schematic model to show the relationship between the constructs. The model depicts the

relationship between feeling integrated both academically and socially in school and feeling isolated with the likelihood of departing from school. Tinto further explains his theory by using positive and negative experiences. Those students experiencing negative feelings will diminish their intentions and commitments to stay in school and will eventually decide to leave school. Positive interactive experiences in school will enhance the desire to remain in school (Tinto, 1987, 1993; Davig & Spain, 2003-2004; DeShields et al, 2005).

Tinto's theory began with the work of Emile Durkheim. Durkheim, an eminent sociologist and academician, was a strong supporter of social research and a leader for the reconstruction of modern society (Tinto, 1987). Durkheim's theory embodied the principles of sociology, and through those he sought to explain why rates of suicide varied among countries. Durkheim went on to study the different types of suicides—altruistic, anomic, fatalistic, and egotistical (Tinto, 1987). "Egotistical suicide is that form of suicide which arises when individuals are unable to become integrated and establish membership within the communities of society" (Tinto, 1987, p. 101). Tinto's theory of student departure is used in higher education to explain student separation from school as Durkheim's theory of suicide is used in sociology to explain different types of suicide or an individual's lack of integration into society. Tinto's theory is based on the premise that social and intellectual integration of college students will enhance the chances of students staying in school (Tinto, 1987).

Tinto's (1987) theory identifies five major concepts. (1) Pre-entry attributes; (2) goal commitments; (3) institutional experiences; (4) personal/social integration,

and (5) academic integration. Pre-entry attributes encompass family background, skills and abilities, and prior schooling. Goal commitments encompass student intentions, goals and commitments. Institutional experiences encompass extracurricular activities and peer group interactions. Personal and social integration encompass interaction with peers as well as faculty and staff. Academic integration encompasses academic performance. Thus, the major features of Tinto's model are family background, skills and abilities, prior schooling, student's intentions, goals, commitments, extracurricular activities, peer groups, faculty and staff interactions, and academic performance (Tinto, 1987).

Tinto's model is appealing to people because it is centered on the idea of integration (Draper, 2003). It combines social and academic aspects that give students a sense of belonging. This theory is socially significant in addressing essential issues about student persistence in higher education. Tinto proposes that the withdrawal from a community college is due more to external factors than internal factors; that is, community colleges do not provide enough on-site student camaraderie to promote social integration (Tinto, 1987). According to Tinto's schematic model, which shows the relationship between academic and social integration, there is a relationship between the student's being integrated in school both academically and socially and the student's willingness to stay in school or depart from it.

During the last three decades, Tinto's theory has been revised and adapted by other theorists, such as Bean and Metzer (1985) and Astin (1985). Several empirical studies by Bean, Metzer, and Astin have led to the evolution of new retention

theories. Among these are Bean's Student Attrition, Intentions, and Confidence Model, Bean's Student Attrition Model or Departure Model and Astin's Theory of Involvement.

Bean's (1982) Student Attrition, Intentions, and Confidence Model. Bean (1982) conducted a study – a causal model of student attrition to investigate the causes for attrition of college degree-seeking freshmen students. This research captured the essence of his study to investigate the dependent variable in this model—'dropping out' and the causes for it (Bean, 1982). Bean's literature review provided a background to the problem as he started with a review of different persistence theories, such as Tinto's (1987). Bean's literature review was consistent with that of Tinto's.

Bean (1982) presented his major propositions based on ten determinants that are more likely to produce differences in student attrition and explained the relationships among them. These are (1) intent to leave; (2) practical value; (3) certainty of choice; (4) loyalty; (5) grades; (6) courses; (7) educational goals; (8) college major and job certainty; (9) opportunity to transfer; and (10) family approval of the institution (Bean, 1982).

Bean's (1982) sample consisted of 1,574 full-time, unmarried freshmen at a Midwestern state university who were 21 years old or younger and who had not taken classes at any other university. Since this sample represented a homogeneous group of higher ability students as indicated by ACT scores, external validity is an issue. Future studies could address these threats to external validity since the results of the

study could not be generalized due to the homogeneity of the sample group. The data were collected in a two-step longitudinal questionnaire process.

Based on Bean's (1982) study, the following recommendations are likely to increase student retention: (1) keep students motivated so that their grades improve; (2) promote the value of the student's selected major; (3) provide a sense of belonging and loyalty for the institution by making students feel that they made the right decision in selecting that particular institution; (4) make course offerings appealing and interesting; and (5) capitalize on the importance of attaining a degree and promote the value of completing such a degree. This theory is considered to be socially significant and useful in trying to understand attrition problems. From the results of this study, it is apparent that this theory is socially significant in addressing essential issues about student retention, and is useful in explaining, predicting, and discriminating among those students who might not fall under Bean's suggested recommendations.

Bean's (1990) Student Attrition Model or Departure Model. Bean (1990) introduced his seminal model, known as Student Attrition, to explain student withdrawal from school. Bean's Student Attrition Model is analogous to that of Tinto's in that it encompasses both academic and social integration (Hossler & Bean, 1990). However, Bean's theory went further by identifying six major constructs that included internal and external variables that might affect the student's decision to stay or leave school. These were (1) academic background; (2) institutional characteristics; (3) academic integration; (4) social integration; (5) environmental pull; and (6) attitudes and other outcomes (Bean, 1990). Background variables

encompass education plans and goals, high school grade- point-average (GPA), rank, college-preparatory curriculum, parents' income, education, and support. Institutional variables include admissions, courses offered, schedules, rules and regulations, academic services, social services, and financial aid. Academic integration encompasses the following variables: study skills, habits, relationship with faculty, college major certainty, and absenteeism. Social integration includes close friends on campus, informal contact with faculty, and a social support system. Environmental pull encompasses lack of finances, significant other living elsewhere, opportunity to transfer, work role, and family responsibilities. Attitude includes satisfaction, sense of self-development, practical value of education, and self-confidence (Bean, 1990).

Bean's student attrition model is of great importance to the study of student retention in that it encompasses both academic and social integration (Hossler & Bean, 1990). It also identifies internal and external factors that may contribute to the decision of remaining in school or leaving. The model further analyzes the relationship between these internal and external factors. These factors include educational plans and goals, environmental setting conducive to learning and attitudinal components, such as satisfaction and self-confidence. This theory continues to be examined today by other eminent researchers in the field of student persistence because it includes variables that affect not only the student and the family, but also the academic institution.

Astin's (1985) Theory of Involvement. Astin's theory of involvement is perhaps the most widely adopted college-impact model of student development

(Rendon, et al., 1999). This theory is socially significant because it addresses essential issues about student persistence in completing higher education, and it is useful in explaining, predicting, and discriminating the reasons why a student would leave school. Social involvement encompasses not only the interaction with faculty members, but also the use of resources throughout the college, interaction with staff members, participating in extra-curricular activities and peer involvement (Fernando, 2005).

Astin's Theory of Involvement is clearly student centered (Astin, 1985). Astin stated, "Quite simply, student involvement refers to the amount of physical and psychological energy that the student devotes to the academic experience" (1985, p. 134). Students who are actively involved in school activities—academic and/or social—tend to stay in school (Tinto, 1987; Hlyva & Schuh, 2003-2004). Students feel that they are part of the school body; therefore, they invest time in being in school and participating in school activities, sports, clubs, and associations. Student involvement refers to the behavioral aspects of student persistence (Astin, 1985).

Astin's (1985) involvement theory identifies five basic postulates. First, the student invests physical and psychological energy in school. This may be very specific, as in the case of studying for a test, or more general, as spending time in the actual school facility. Second, student involvement is represented at different levels depending upon the activity or event. Third, student involvement can be both qualitative and quantitative in nature. Fourth, student learning has a direct correlation with the student's involvement in school. Fifth, school policies are enforced positively when there is a direct student involvement and acceptance.

Astin's theory continues to be examined today as it is considered to be relevant to student retention in higher education (Rendon, Jalomo, & Nora, 1999). Staying actively involved in school helps retention. Tinto (1997) stated that students who are actively involved in school stay in school. This school involvement includes both academic and social interaction.

Empirical Studies

Student retention is an area that has sparked great interest, not only for school administrators, but also for students, employers, and government agencies. As the number of students enrolling at two-and-four-year institutions increases, so will the number of students who withdraw from academic institutions prior to completing a degree. The causes of student withdrawal from school have provided scholars with myriad opportunities to do extensive research on the topic of student retention. Finding answers to the reasons why students depart from school before graduation is important, not only to students, but also to academic institutions.

Renowned retention scholars, such as Tinto, Astin, Bean and Metzner, lead the way in promulgating retention strategies that may promote higher retention rates. These scholars have conducted empirical studies and have introduced models and theories that can be replicated at other institutions of higher education. Results of some of these studies may help in the implementation of retention strategies to enhance retention rates. Some of the constructs and propositions recommended by Tinto, Astin, Bean and Metzner have been challenged and lead to new empirical research studies. This is evidenced by empirical studies conducted by French and Oakes (2004), Napoli and Wortman (1996), Okun, Benin, and Brandt-Williams

(1996), Milen and Berger (1997), Nippert (2000), Crissman (2001), Ryan and Glenn (2002), and Landrum (2001-2002).

Measurement of Integration: Institutional Integration Scale (IIS). French and Oakes (2004) conducted a methodological study to measure Tinto's five propositions of college student academic and social integration. The study evaluated the psychometric properties through examination of (1) item analysis, (2) inter-correlations among the subscales, (3) internal consistency reliability, and (4) the factor structure through confirmatory factor analysis (CFA) (French & Oakes, 2004). "The coefficient alpha was .83 for the first sample; however, the coefficient alpha was .92 for the second sample with the 34-item revised scale (French & Oakes, 2004).

The *Institutional Integration Scale* (IIS) was used to measure five propositions of college student academic and social integration (French & Oakes, 2004). The scale was based on Tinto's (1987) model of student departure, and it is a self-report scale of student perceptions of academic and social integration.

The results of the study are consistent with previous findings which suggest that there is a high correlation between social and academic integration and students' persistence to stay in school (French & Oakes, 2004). The IIS seems to be a useful tool to measure the correlation between college students' level of academic and social integration. However, the researchers point out that future evaluation is needed because validation is limited to this study (French & Oakes, 2004). This is especially true as it limits the generalization of the findings and the usefulness of the scale if applied to larger populations (French & Oakes, 2004).

To further assess the effect of social integration on persistence, and to assess the magnitude of the effect for academic integration, a meta-analysis was conducted by Napoli and Wortman. Napoli and Wortman (1996) conducted a meta-analysis to determine the effect of academic and social integration on persistence of community college students. The effect of size estimates were analyzed with Hedges's adjustment for sample size, and tests for the influence of moderator variables on effect. To measure stability of the measures, "fail-safe n" analysis was conducted (Napoli & Wortman, 1996).

The time frame for this study extended back to 1980 which was the date of the first validation effort of Tinto's model (Napoli & Wortman, 1996). The search produced 11 studies and from those, five were used for the meta-analysis. In addition, Napoli used data from his own previously unpublished study which included 1,011 first-time full time community college freshmen (Napoli & Wortman, 1996). There was a positive correlation between academic integration and persistence. Social integration had mixed results between social integration and persistence; however, social integration had a significant and positive impact on persistence (Napoli & Wortman, 1996).

The meta-analysis results for both academic and social integration show a positive impact on student persistence among college students. "The combined overall effect size for social integration was found to be significant, and it reflects the important impact social integration has on persistence/withdrawal decisions of community college students" (Napoli & Wortman, 1996). Meta-analysis design and data analysis methods were strong. However, the sample size used to determine

relationships was too small, which represents a weakness in the internal validity of the study. Future studies should comprehensively study the factors that affect retention and attrition among two and four-year institutions. Also, there is doubt about data-gathering procedures over the years, the meaning of variables, and the veracity of scores.

Measurement of constructs in Bean's attrition model. Using Bean's model, Okun, Benin, and Brandt-Williams (1996) conducted a correlational study of student retention and the relationship between intention and institutional departure. They used an empirical, quantitative design which depicted their hypotheses of the relation between the intention to stay in school and leaving school based on the variables of semester grade point average (GPA), commitment, and encouragement to stay in school (Okun, Benin, Brandt-Williams, 1996).

Findings supported the hypotheses that as commitment increases, the intention-departure relation increases; and as encouragement to stay increases, the relation between intention and departure decreases (Okun, et al., 1996). Okun, Benin & Brandt-Williams' findings are consistent with Tinto's (1987) Longitudinal Model of Individual Departure and Bean's (1982) Attrition Model as the correlation between commitment to stay and depart is made.

Measurement of involvement constructs in Astin's theory. Milem and Berger (1997) conducted a longitudinal, prospective, and correlational study to test a modified conceptual model of student persistence combining behavioral constructs from Astin's (1985) and Tinto's (1987) models. The review of the literature included

analysis of theoretical literature about Astin's (1985) and Tinto's (1987) theories of persistence, and empirical literature about student departure.

The study findings supported a large body of research linking positive student outcomes with faculty involvement, both in and out of the classroom. Milen and Berger (1997) found that the correlation between Tinto's constructs and student involvement were pretty much consistent and as he had imagined them to be--the higher the student involvement, the higher the institutional commitment. Milem and Berger found that academic integration did not predict either institutional commitment as Tinto suggested in his model or the dependent variable of intent to reenroll (Milen & Berger, 1997). Social integration, on the other hand, did provide a significant positive predictor of institutional commitment (B .31) and intent to reenroll (B .13) (Milen & Burger, 1997). Findings at this institution suggest that social integration may have a more influential role in predicting student persistence than does academic integration. Institutional commitment was a strong predictor of intent to reenroll (B .40) (Milen & Burger, 1997).

One of the limitations of this study had to do with the sample. This was a highly selective research university. Its findings may not be applicable to other universities. Therefore, a generalization cannot be made. A similar study should be conducted and tested with data from a more diversified group of students attending other types of institutions.

Nippert (2000) conducted an empirical study of 4,408 first time, full-time freshmen attending 360 colleges to examine the factors that influenced student retention in two-year colleges. Although Nippert acknowledged that theoretical and

empirical evidence gathered in the previous thirty years has largely upheld Tinto's model of student retention in four-year colleges, her study aimed to gather evidence regarding the importance of social and academic integration to those students enrolled in two-year institutions. Specifically, Nippert examined the effects of "students' backgrounds, academic and social integration, external influences, and institutional satisfaction on the educational degree attainment of students who began their college experience at two-year colleges" (2000, p. 31). The methodology utilized in this study was extracted from Tinto's (1975) and Bean and Metzner's (1985) retention theories (Nipper, 2000).

Using fourteen variables on the educational degree attainment of two-year college students, Nippert concluded that such institutions should devote greater resources to the students' academic rather than social integration. The study found that "no significant relationship existed for social integration with persistence behavior of two-year college students" (Nippert, 2000, p. 37). It was also noted that administrators of two-year colleges should concentrate their retention efforts on academic integration rather than on social integration (Nippert, 2000). However, as Nippert herself conceded, the study derived from a homogenous sample group, and she urged that additional research was necessary to take into account "other independent variables, such as ethnicity, race, and age and their relationship to degree attainment" (Nippert, 2000, p. 39).

Crissman conducted an empirical study "to determine if students enrolled in a clustered section of a freshman seminar and English composition course were more likely to enroll for their second semester of college than students who participated

only in the freshman seminar without the clustered English composition course" (2001-2002, p. 138). The framework for Crissman's study was based on a model developed by Astin (1993). This research study itself concentrated on pre-college variables, such as gender, academic aptitude, high school achievement, and parental educational level, as well as "during college variables," such as place of residence, faculty contact, and academic and social integration and the effects of such variables on retention (Crissman, 2001-2002). The study took place at a small college located in the northeastern United States.

Unlike previous studies conducted regarding the retention ramifications of clustering versus nonclustering, Crissman's (2001-2002) study did not show any statistical difference in retention rates between the clustered and nonclustered groups of students. Crissman theorizes that the discrepancy in her study may have resulted from the fact that the previous studies have focused on large institutions, where "the contrast between the clustered experience and all other in-class and out-of-class experiences may result in differences not apparent in smaller institutions where small classes and more meaningful contact with faculty are the norm for all classes, not just clustered courses" (2001-2002, p. 147).

Ryan and Glenn (2002) published a report and analysis of a 5-year program development effort conducted by an urban metropolitan university with a large commuter population of first-generation college freshmen. Ryan and Glenn dubbed their paper an "odyssey" "because it chronicles the path we took when we allowed our decision making to be guided by the results of focused studies rather than by our preconceptions about what our students needed" (2002-2003, p. 300). The empirical

evidence was initially gained by conducting surveys of 608 first-time, full-time freshmen as they waited to see an academic advisor during the sixth week of their first semester (Ryan & Glenn, 2002-2003).

The crux of the Ryan and Glenn report is that the bifurcation of social and academic integration variables may sometimes fail to capture the nuanced interplay between social integration and academic integration as they relate to student retention. Driven by the existing literature on retention, the initial surveys conducted by the authors focused on issues related to social integration, what Ryan and Glenn call their institution's "then-existing customer-oriented efforts to increase student satisfaction and retention--e.g., availability of financial aid, course availability, quality of service in offices of registrar/bursar/financial aid, cost of tuition/fees/books, quality of social events on campus" (2002-2003, p. 301). However, Ryan and Glenn were surprised to discover that "faculty standards" and "quality of instruction" were among the top six predictors of student retention (2002-2003, p. 302). Ryan and Glenn concluded that they had been "neglecting important features of the academic environment in planning retention programs" and that in so doing, "were failing to take advantage of the opportunity to foster academic integration as a means for enhancing institutional commitment and student retention" (Ryan & Glenn, 2002-2003, p. 302). The data collected by the authors found that "an increasing emphasis on academic efficacy in a retention program produces an increasing impact on one-year retention efforts" that is to say that improving students' own academic self-efficacy and by facilitating increased student-instructor contact, retention is enhanced (Ryan & Glenn, 2002-2003, p. 319). Ryan and Glenn concluded that "the efforts of

student affairs offices to develop learning skills can be expected to facilitate academic integration by helping students become more effective consumers of instruction within the academic system of a postsecondary institution" (2002-2003, p. 298-299).

Unlike many empirical studies of student retention and attrition, Landrum's (2001-2002) study on the responsibility of retention as perceived by both students and personnel focuses not on hard data involving actual rates of attrition or retention, but rather on the allocation of responsibility for student retention as judged by university personnel as opposed to students. As Landrum points out, "when examining potential initiatives to help students achieve their goals, it is necessary to know whether the causes of attrition are primarily student-oriented or university-oriented" (Landrum, 2001-2002, p. 196). Although this point might at first seem rather obvious, Landrum's work was the first to attempt to "ascertain the perceptual differences between students and university personnel on the relative responsibility of students and the university" on a series of retention factors (2001-2002, p. 198).

Landrum's study was conducted at a public, Western metropolitan university that enrolls over 16,000 undergraduate students. Eighty one variables were tested for by statistically comparing the ratings between students and university personnel (Landrum, 2001-2002). The study found that "in considering these 81 variables, 41 of the analyses indicated no significant difference between the ratings of the two groups," (Landrum, 2001-2001, p. 203) and that where differences existed, "university personnel typically attribute more responsibility to themselves and less the students" (Landrum, 2001-2001, p. 210). However, the results also demonstrate

that "students are willing to accept much of the responsibility for retention rather than blame the university" (Landrum, 2001-2001, p. 210).

Retention of Non-Traditional Students

More than half of the nation's total college student population forms a special category of students called 'non-traditional' (King, Anderson & Corrigan, 2003). Non-traditional students are usually 25 years or older, have family and job responsibilities, may be single parents and may be the sole breadwinners of the household (King, Anderson & Corrigan, 2003). For the non-traditional students, juggling family, work and school responsibilities becomes a challenge, which for many students may lead to an early departure from school. The study of the causes that lead non-traditional students to depart from school prematurely has given impetus to the development of models and theories to understand student departure.

Model and Theory

Predicting retention and withdrawal behaviors of college students has created a momentum for the development of scholarly research. Scholars are interested in understanding the reasons why students withdraw from college prior to graduation. Finding out the reasons for students' early departure and implementing measures for prevention have lead researchers to design many retention models and theories. These models and theories attempt to explain the withdrawal behaviors of college students with the purpose of implementing retention strategies to prevent early departure from school. The research that has been done in the area of student retention, in particular for the non-traditional student, has not been as extensive as for

the traditional student. Nonetheless, important models have been designed for the non-traditional student such as that of Bean and Metzner's non-traditional student retention model.

Bean and Metzner's (1985) non-traditional student retention model. According to Bean and Metzner (1985), non-traditional students are affected more by the external environment than by the social integration variables that affect the traditional students. Tinto (1987) further proposes that the withdrawal from a community college is due more to external than internal factors. This is evidenced in the non-traditional student who rushes in and out of class to attend to a full time job, a family situation or any other circumstance that presents itself in the life of that student.

In the mid-1980's, Bean and Metzner (1985) introduced their seminal model of non-traditional, undergraduate student attrition with the objective of understanding rising non-traditional student enrollment, as well as understanding the reasons for non-traditional student attrition rates. This theory identifies four constructs. The first is academic performance. Students who perform poorly would be expected to drop at a faster rate than those students with higher GPA's. The second variable is the intent to leave. The students who are not committed to the institution or their studies will make the decision to leave the institution at a faster rate than those students who are committed to stay. Bean and Metzner mention that the third group of variables affecting attrition includes background and defining variables. These refer specifically to previous high school grades and educational goals. The fourth group of variables in Bean and Metzner's model refers to the environmental influence

experienced by the non-traditional student while attending school, which have a direct relation to the student's decision to leave school. These environmental variables, according to Bean and Metzner (1985), are more important than the academic variables for non-traditional students. There is a strong correlation between environmental and academic variables. When these two variables are high, students tend to stay in school. When these variables are low, the chances of the student leaving school tend to be higher.

Bean and Metzner (1985) also noted that when the environmental support is low, the student will leave school even when the academic support is present. However, when the student experiences high environmental support, even if the academic support is low, the student will tend to stay in school. If a student is having personal needs, for example baby-sitting or financial issues, the student will tend to leave school sooner. Students who are encouraged by family, friends and employers will tend to persist in staying in school even when their educational goals are not clear or they are not getting the educational support. "Non-academic factors compensate for low levels of academic success, while high levels of academic achievement only result in continued attendance when accompanied by positive psychological outcomes from school" (Bean & Metzner, 1985, p. 492).

The authors concluded by pointing out their limitations as it pertains to the research that has been conducted on the non-traditional student. Little research has been conducted, and "of this research, which was based on theory, almost all of the studies employed Tinto's model, which was meant to explain attrition at residential institutions, emphasized social integration, and excluded variable from the external

environment" (Bean & Metzner, 1985, p. 528). Future research about non-traditional students is needed and (1) it should be based on a theory; (2) it should not be based solely on social integration; (3) it should include external environmental variables; and (4) it should contain multivariate research models (Bean & Metzner, 1985).

Empirical Studies

The study of non-traditional students is important in maintaining high retention rates. Non-traditional students leave institutions of higher education at greater rates than traditional students (Peltier, Laden, and Matranga, 1999/2000). Non-traditional students need to balance their studies with family and work responsibilities, as well as any extra-curricular activities. This places non-traditional students in an "at risk" situation for not completing their education (Rautopuro & Vaisanen, 2001). More effective retention strategies are needed in order to assist non-traditional students to cope with school and to decrease the drop out rates most colleges are experiencing. These retention strategies need to be tailored to a particular group, not to all students, to make them effective and worthwhile (Caison, 2004-2005). It is relevant to point out that different meanings of terms, such as 'adult', 'mature', and 'non-traditional' are problematic since they vary within geographical areas and within periods of time and cultures (Rautopuro & Vaisanen, 2001).

The problem of attrition among non-traditional students has escalated to a point where the use of public resources is needed to explain the reasons for student withdrawal (Summers, 2003). This is especially true at community colleges where

the problem seems to intensify now more than ever after decreased state funding. The non-traditional student rushes in and out of class to attend to a full time job, a family situation, or any other circumstance that presents itself in the life of that student. Bers and Nyden stated that "retaining community college students requires creativity, flexibility, and adaptiveness" (2000-2001, p. 216).

Pidcock, Fischer, and Munsch (2001) conducted a causal-comparative, longitudinal study, using multivariate analysis about family, personality, and social risk factors impacting the retention rates of first-year college Hispanic and Anglo college students. Pidcock, Fischer, and Munsch (2001) studied the familial and behavioral differences between these two ethnic groups during the first year of college. The objectives of the study were to examine (1) risk factors associated with family dysfunction, such as addictions and personalities, and (2) student problem behaviors, such as alcohol use, drug use, and eating disorders (Pidcock, Fischer, and Munsch (2001).

Study findings reveal that Hispanic students tend to be more vulnerable if they do not have a family figure that they might emulate (Pidcock, Fischer, and Munsch, 2001). Hispanic females left school at far greater rates (39%) than did Anglo females (9%). On the other hand, Hispanics males left school at a lower rate than did Anglo males (Hispanic, 12%; Anglos, 31%). No significant effect of gender and no significant interaction of gender by ethnicity were identified. Hispanics appeared to be at greater risk for problem behaviors in the areas of family and social experiences. Less mentoring means Hispanic students may not have access to an important protective factor that could discourage problem behaviors (Pidcock, Fischer, &

Munsch, 2001). Hispanic youth evidenced fewer problem behaviors than did Anglo youth in their first semester of college in the area of alcohol/drug abuse, and no difference in the potential of eating disorders (Pidcock et al., 2001).

Santos and Reigadas (2004–2005) conducted an empirical study to shed light on the effect of mentor-mentee relationships on at-risk students' adjustment to college. More specifically, the study examined ethnic homogeneity between the mentor and the student-mentee and the correlation between such homogeneity and the success of the mentoring process as measured by the frequency of visits paid by the mentee to the mentor. The study was conducted in the greater Los Angeles metropolitan area on an ethnically diverse campus (Santos & Reigadas, 2004-2005).

At the heart of the Santos and Reigadas study is the correlation between the frequency of a student's visits to his or her mentor and that student's connection within the university structure and community. In order to test "the hypothesized relationship between ethnic homogeneity and social embeddedness, the researchers entered ethnic match as an independent variable on the first step of a regression analysis and used frequency of student mentor-contract as the dependent variable" (Santos & Reigadas, 2004-2005, p. 346). "As predicted, this analysis revealed a significant direct effect of ethnic match with student-mentor contact, and more frequent students visits with their mentors" (Santos & Reigadas, 2004-2005, p. 346). This, Santos and Reigadas concluded, demonstrates that "homogeneity in student-mentor cultural backgrounds appears to be a relevant affiliative dimension directly influencing students' level of social embeddedness within the university social system in terms of faculty contact" Santos & Reigadas, 2004- 2005, p. 351) and thus a

stronger deterrent to at-risk student attrition than non-homogenous mentor pairings (Santos & Reigadas, 2004-2005).

Helland, Stallings, and Braxton (2001-2002) conducted an interesting empirical examination of one factor relating to social integration within a collegiate institution as it relates to student retention and attrition. Arguing that the concept of social integration remains largely unexplained by traditional empirically backed propositions (Helland, Stallings, & Braxton, 2001-2002, p. 382), the authors endeavored to obtain empirical evidence of the relationship between a student's expectations of a college, the degree to which their actual experiences correspond to those expectations, and the resulting association between the failure or meeting of those expectations and student retention.

The researchers found that "the fulfillment of social expectations not only influences social integration in a positive way, but affects positively subsequent institutional commitment" and that "in turn, both social integration and subsequent institutional commitment directly affect students' re-enrollment intentions" (Helland et al., 2001–2002, p. 388). Furthermore, the study concluded, "the fulfillment of social expectations wields an indirect effect on another key dimension of the college student departure process: the decision to withdraw or re-enroll" (Helland et al., 2001-2002, p. 393). The study found that while parental education level influenced initial institutional commitment, it had no bearing on collegiate social expectations, which were largely affected by gender and income.

Differences between Traditional and Non-Traditional Students

Extensive research has been done in the area of retention for the traditional student. However, this is not the case for the non-traditional student. There is a need to promote the study of the retention behavior of the non-traditional student. Tinto (1987) advocates the importance of both academic and social integration to achieve retention. Unfortunately, the non-traditional student has family and job responsibilities that prevent the student from participating in out-of-the classroom activities that might enhance student retention. In order to promote student retention strategies that enhance retention rates for the non-traditional student, it is essential to conduct empirical research studies to understand the behavior and the needs of the non-traditional student. Retention strategies that may prove useful for the traditional student may not have the same effect for the non-traditional student given the different variables affecting that non-traditional student. More research studies geared to the non-traditional student are needed in order to understand the reasons why students leave school prematurely.

Empirical Studies

Rautopuro and Vaisanen (2001) conducted a longitudinal, causal-comparative study of traditional and non-traditional students. They proposed that there are two groups of students who are trying to adjust to the university setting. These are the traditional students and the non-traditional students. Rautopuro and Vaisanen defined traditional students as the young, recent high-school graduates who are still struggling with the transition from adolescence into adulthood. These traditional students need to adjust to the school environment while leaving behind family members and friends.

Non-traditional students or mature students, on the other hand, are defined as being over 23 years old, working, and who may have family responsibilities of their own. This latter group, may be studying for a second career, may be married, and may or may not have children. Therefore, the problem investigated in this study was whether non-traditional students experienced different outcomes and if university involvement and other factors have a significant impact on outcomes of younger students.

Rautopuro and Vaisanen (2001) concluded that some of the findings may be conflicting and unexpected due to the differences between the two groups—traditional and non-traditional students. Both groups bring with them different life experiences, educational backgrounds, maturity levels, and life situations to name a few. While it may be inconvenient for the adult student to enroll in school while maintaining a full time job, or for younger students to enroll on a part-time basis or stop due to family responsibilities, it is difficult to generalize and conclude a set pattern for either the young or non-traditional student. More research is needed comparing the differences between the traditional and non-traditional student to stimulate discussion of ways to improve learning and student outcomes. The authors recommend further research to bring together alternatives for the learning/instructional setting for the traditional and non-traditional students as the trend seems to indicate that this will continue.

Subsequently, Summers (2003) examined theoretical models that explained and predicted attrition at community colleges. These models focused on student retention at community colleges; its main objective was to attempt to predict student attrition and recommend areas for future study.

This review examined four models of retention for traditional students and one model for non-traditional students. These models have been developed by eminent scholars to analyze and understand the variables that influence student persistence in continuing college studies or on the decision to leave school. The four models are Tinto's (1987) model of departure, the most widely recognized model; Bean's (1982) student attrition model of departure; Astin's theory of student involvement; and Bean and Metzner (1985), a conceptual model developed especially for the non-traditional students. Study findings reveal that academic and social integration positively impact persistence (Summer, 2003).

Summer (2003) indicates that the older the student, the higher the chances of withdrawing from school. Gender seems to be another variable that has been studied intensively. Ethnicity has been studied and found to be linked to student persistence (Summers, 2003). Students' job responsibilities also play an important role in student retention. Students who work a full-time job are more likely to drop-out from school because of time constraints and trying to manage a full-time job, academic workload, and family responsibilities (Summers, 2003). In addition, Summer's review provided empirical evidence that enrollment and registration behaviors can predict significant variation in student academic outcomes (Summer, 2003).

Lundberg sought to empirically test Astin's (1984, 1983) model of student involvement, which argues that "activities that draw student-effort off campus have a negative effect on learning because these involvements leave students with less energy or time for campus involvement" (2003, p. 665) insofar as that model related to non-traditional students between 23 and 30 years of age. As Lundberg states,

"studies of the effect on student peers on learning focused primarily on younger students have found that peers serve a vital educational function as they engage students more deeply in the college experience," (2003, p. 666). However, the data relating to the role of peers in the success of adult students are inconclusive and often contradictory. Lundberg concluded that peer interactions are not necessarily predictors of student success.

Lundberg's (2003) study sampled 4,644 undergraduate students and measured for variables relating to efforts in reading and writing, frequency and quality of relationships with peers and faculty, time-limiting characteristics, and background characteristics. Interestingly, Lundberg refined the definition of "peer social interaction" by "separating educationally related peer relationships from purely social relationships" and found that "peer relationships contribute strongly to learning for students of all ages when those relationships are related to learning" (2003, p. 681). With this refinement, Lundberg's study yielded data that was in line with existing literature regarding the negative effects on learning caused by commuting and other time limitations on students under 30, but revealed that commuting, working, and other time limitations had no negative effects on students 30 and older. "With the exception of enrolling part-time," Lundberg writes, "students 30 and older appear to be quite different from young students in terms of their ability to manage time limitations in such a way that they do not hinder learning as they do for younger students" (2003, p. 682). Lundberg concludes that in addition to having reported better quality of relationships with their professors and administrators, older students—although spending less time in social interaction with their classroom

peers—nevertheless spent more time discussing school-related topics in peer relationships outside of the traditional boundaries of the educational institution, i.e., in pre-existing social forums and relationships.

Pascarella, Wolniak, Pierson, and Terenzini (2003) provided an empirical study on first-generation community college students. The aim of the study was to fill a gap in empirical evidence regarding the college experiences of first-generation students as well as "their cognitive and psychosocial development" (2003, p. 420). More specifically, the study "sought to estimate net differences between first-generation and other college students in their academic and nonacademic experience of college" as well as to estimate "the net differences between first-generation students and their peers after two years of college in select cognitive, psychosocial, and status attainment outcomes" (Pascarella et al., 2003, p. 421).

After drawing from an institutional sample that consisted of five community colleges located in five different states spread throughout the country, Pascarella et al. found that "even in the presence of controls for an extensive battery of precollege/demographic influences, first-generation students in community colleges have a somewhat different set of experiences than their peers" (2003, p. 425). Pascarella et al. found that on average, first-generation students

> completed fewer credit hours; studied less; took fewer courses in the natural sciences, mathematics, and the arts and humanities; achieved lower grades; were less likely to join a Greek organization; and had more work responsibilities than their classmates whose parents had both completed a bachelor's degree or above (2003, p. 425).

Retention Strategies

College retention strategies date back as far as 1882 at Lee College in Kentucky (Barefoot & Fidler, 1996). At that time, colleges were charged with the responsibility of creating a freshman orientation course that would help students become adjusted to college life. More than one hundred years later, the latent need for retention strategies that would help students stay in school and get students adjusted to college life is still very much present. Braxton and Mundy (2001) conducted a student retention study which culminated with a list of 47 recommendations to reduce college student attrition. These 47 recommendations are very much in line with Tinto's principles of effective retention (Braxton & Mundy, 2001). Among these recommendations, promoting both student and faculty awareness of appropriate co-curricular programs and resources was highlighted as it pertained to student support groups. Other recommendations included academic advising, first year seminars, peer counseling, mentoring programs, residential colleges, and community service groups (Braxton & Mundy, 2001).

Renowned scholars in the area of student retention agree that the implementation of retention strategies is crucial if retention rates are to improve. Lowe & Toney (2000-2001) believe that an effective academic advising program enhances student retention. Through the process of academic advising, a student gets to know the academic advisor. Both student and academic advisor invest time for the benefit of the student's success. Through academic advising, the student learns about the institution and the student's program requirements. The student-academic advisor bonding is solidified, thereby leading to an enhanced social and academic integration

(Lowe and Toney, 2000-2001). A second recommended student retention strategy is creating a positive environment that is conducive to learning. The office of Student Affairs and faculty involvement are paramount in setting up student-faculty activities that promote social integration and advocate student support services (Pearson & Bowman, 2000). The third student retention strategy recommended to increase student retention is that of offering First Year Seminars or Strategies for Success Seminars. Such seminars provide freshmen students with basic survival skills--study skills, note taking, time management—that are needed in order to make it through college. Folsom, Peterson, Reardon and Mann (2004-2005) believe that promoting first year seminars or student success seminars enhance student retention. The implementation of successful student retention strategies is crucial in order to promote higher retention rates (Lowe and Toney, 2000-2001).

Academic Advising. In many colleges, academic advising is considered to be a minor activity, and it is often assigned to inexperienced staff members or new faculty without proper training (Lowe & Toney, 2000-2001). Yet, it is believed that an effective academic advising program contributes to student persistence (Lowe & Toney, 2000-2001). Retention improves when students are involved in the process of academic advising and the faculty member has the student's best interest at heart. Academic advisors' attitudes and the quality of advising have a direct impact on the students' desire to remain in school (Culver, 2005).

The process of academic advising is important not only to students, but also to academic institutions as it helps students stay in school by ensuring academic progress and student satisfaction (Lowe & Toney, 2000-2001). Academic advising is

paramount as "it represents the formal mechanism through which students are introduced to campus resources and the means by which they are informed about the requirements of their academic program" (Lowe & Toney, 2000-2001, p. 96).

Lowe and Toney (2000-2001) conducted a correlational study on academic advising. The study concentrated on student satisfaction with academic advising. The researchers sought out important variables such as type of advisor, student status, and the frequency of the contacts with the advisor to predict student persistence. Student perceptions about the concept of academic advising was an important element as well. The results of the study would lead to a set of empirically-based recommendations for the institution to offer a better academic advising program.

A set of 200 students using convenience sampling was selected for the study. Approximately 600 students were enrolled. A pilot survey instrument was developed using the results of a review of the literature to establish item content (Lowe & Toney, 2000-2001). A Likert scale was used for this instrument. A group of students enrolled in an advanced English class completed the instrument. The pilot group included 22 undergraduate and graduate classes. A test/retest method was used to ensure stability of the instrument. The result of the correlation coefficients indicates that there is a significant relationship between satisfaction and frequency of contact with advisors for all students. There was no relationship between satisfaction and the type of advisor by student status. The analysis of variance test resulted in a probability level of .04.

It is important for schools to offer an academic advising program that meets the needs of students. Student profiles must be reviewed and advisors must be trained

so that they can better help the students. Practical implications from this study to enhance retention are: the importance of frequent meetings with advisors; recognition that a diverse student body needs special treatment; and the need for advisors to be familiar with the process of advising in order to more effectively assist students (Lowe & Toney, 2000-2001).

Lowe and Toney's practical recommendations to improve academic advising are

(1) Academic advising should be considered a priority, not a chore; (2) Increase the availability of advisors; (3) Institute a peer advising system. Senior students can mentor new comers, thus reducing the need to increase the pool of advisors; and (4) provide literature, such as handbooks and other printed material that correlate with the information being given by the academic advisors; and (5) provide workshops and group advising sessions with homogeneous groups of students. An online advising service is also highly recommended.

These recommendations, if implemented, should be beneficial to the institution and increase student retention.

Student Affairs and Faculty Involvement. Creating a positive environment that is conducive to learning leads not only to improved learning, but also to improved retention rates (Pearson & Bowman, 2000). According to Tinto's (1987) theory, social and academic integration have a direct impact on student retention. One way to promote social integration between students and faculty is to restructure the teaching load so that professors may have more time in their hands to devote to

student activities (Pearson & Bowman, 2000). Pearson and Bowman suggest that schools need to rethink the way tenureship is granted.

The majority of universities expect the faculty to participate in activities, such as doing research, teaching, publishing and actively engaging in committees. However, if the time invested in student activities were to be valued as highly as the time invested in research, classroom instruction, and publishing, faculty would participate more in activities involving students (Pearson & Bowman, 2000). The role of the Student Affairs or Student Services department is crucial in setting up these social activities that promote student-faculty camaraderie. The recommended student retention strategy is to reduce the faculty teaching load to allow adequate time to participate in more events and activities being planned by the Student Affairs or Student Service Departments to improve student retention.

Student Support Services. With the increase in attrition rates, schools are becoming more interested in implementing different ways of increasing retention rates at their schools and promoting any retention strategies that enhance student success. There are numerous services available to students under the umbrella of student support services. These services are focused on increasing student retention and increasing both social and academic integration. These services encompass academic advising, counseling, computer labs, peer mentoring, peer groups, early registration, faculty mentoring, orientation seminars, college success seminars or strategies for success, tutoring, and supplemental instruction (Grant-Vallone et al., 2003-2004). All of these retention strategies play a very important role in maintaining student retention. However, peer groups, in particular, may provide

students with a vast potential for the development of students' personal and educational development (Astin, 1999). The more interaction students have with their peers, the better the ties that are created among students to solidify retention. This is particularly important during the first few weeks of enrollment (Woosley, 2003).

First Year Seminars. First year seminars, orientation seminars, college success seminars, and strategies for success courses—all have a common goal which is to familiarize students with college life (Folsom et al., 2004-2005). These seminars provide students with a sense of belonging in the particular institution, study skills, note taking, time management, as well as techniques for improving their self-esteem and becoming a better student overall. Incorporating any of these seminars as part of a retention program would create a positive impact on retention (Folsom et al., 2004-2005). There is a growing interest on the part of colleges and universities to enrich a student's college life experience by offering orientation seminars. These first year seminars provide the much- needed support for students to succeed in school by encouraging them to get involved in school (Schnell & Doetkott, 2002-2003).

Retention strategies are constantly being sought that will increase graduation completion rates. Retention strategies, such as academic advising, student affairs, faculty involvement, student support services and first year seminars, are crucial in maintaining student retention rates. Improving retention is an area of interest not only for the academic institution, but also for the students. The investment in time and money on retention strategies that would help promote student success is of utmost importance and should therefore be implemented to increase student retention.

Conclusions

Theoretical Literature

The theoretical literature about student persistence was guided by the work of eminent researchers such as Tinto (1973, 1987 & 1993), Astin (1985) with the Theory of Student Involvement, Bean (1990) with the theory of Student Attrition, and Bean and Metzner (1985) theory of Non-Traditional Student Retention Model.

Among these scholars, the work of Tinto, Astin, and Bean is prominent as it relates to grounded studies in the area of student retention. One of the most important theories about retention comes from Vincent Tinto, an eminent pioneer in the area of student persistence. Tinto (1987) presented an interactive model of student departure and explained the longitudinal process students go through before making the decision of leaving an institution of higher education. Tinto used a schematic model to show the relationship between the constructs. These constructs are based on the premise that a student who feels academically and socially integrated in school is less likely to depart from school. Positive interactive experiences in school will promote the willingness for a student to continue attending school. Tinto's model of student persistence appeals to people mainly because it is centered on the idea of integration in school and feeling part of the school community (Draper, 2003; Guiffrida, 2006).

Tinto proposes that the withdrawal from a community college is mainly due to external factors and not internal ones—community colleges do not provide the student with the sufficient camaraderie to promote the social integration that is needed for a student to stay (Tinto, 1987). Napoli and Wortman (1996), however, do

not verify Tinto's proposition. Napoli and Wortman's (1996) meta-analysis study indicates that the social integration was significant and that it has a direct correlation on the students' ultimate decision to either stay or withdraw from school (Napoli & Wortman, 1996). Napoli and Wortman's findings are in agreement with Tinto's model as it relates to academic integration, but they contradict with the findings of the impact social integration has on the student. Internal validity weakness of Napoli and Wortman's study is noted in the small number of published studies and publication bias which represent a potential threat to the external validity, or 'generalizability' of the findings (Napoli & Wortman, 1996).

Astin's theory is one of the most prevalent theories on student retention. This is a student-centered theory. "Quite simply, student involvement refers to the amount of physical and psychological energy that the student devotes to the academic experience" (Astin, 1985, p. 134). According to Astin (1985), students who are actively involved in school activities—academic and social—tend to stay in school. Astin (1985) goes on further to say that this concept of being involved applies not only to students, but also to faculty as well. When students and faculty get involved in school activities, they create a bond, which makes them both feel part of the school environment. Astin's theory is based on five basic constructs which are all student-centered and which integrate the academic and social aspects as the main reasons for staying in school (Astin, 1985).

Milem and Berger (1997) conducted a longitudinal, prospective, and correlational study to test the behavioral constructs of both Astin's and Tinto's models. The study concluded that there is a high positive correlation between faculty

and student involvement in and out of the classroom. When there is student involvement, there is also high institutional commitment, which in turn has a positive affect on student persistence to stay in school (Milen & Berger, 1997). One of the limitations of the study was the sample population used at a highly selective, private, residential, research university. Its findings may not be applicable to other universities and a generalization cannot be made. It is suggested that a similar study should be conducted and tested with data from students from a more diversified group including community colleges and private colleges.

The majority of the work conducted by both Astin and Tinto has dealt with traditional types of schools. When students are academically and socially integrated in school, the chances of those students persisting in staying in school are greater (Tinto, 1987; Astin, 1985).

Empirical Literature

Retention of college students is a topic of great interest in higher education, not only for school administrators, but also for teachers, students, government agencies and researchers. This topic has sparked the interest of scholars to conduct empirical research. Among these are Tinto (1973, 1987, & 1993), Astin (1985), Bean (1990), Bean and Metzner (1985), French and Oakes (2004), Napoli and Wortman (1996), Okun, Benin, & Brandt-Williams (1996), Milen and Berger (1996), Nipper (2000), Crisssman (2001), Ryan and Glen (2002), and Landrum (2001-2002). Several empirical studies by Bean, Metzner and Astin have led to the evolution of new retention theories.

Okun, Benin, and Brandt-Williams (1996) conducted an empirical, quantitative design, which depicted their hypotheses of the relation between the student's decision to stay or to leave school and retention. Findings supported hypotheses two and three respectively, which stated that as commitment increases, the intention-departure relation increases and that as encouragement to stay increases, the relation between intention and departure decreases (Okun, Benin, & Brantdt-Williams, 1996). Limitations of the study rest in the sample that was used. First, the sample was taken from one institution; in order to generalize the results, the findings will have to be done at other community colleges and universities. Second, the number of those students who transfer to other institutions was low (Okun, Benin, & Brandt-Williams, 1996).

The research shows that one of the weaknesses found in the review of the empirical literature is that of the weakness in the internal validity of the studies due to the small sample being used or the homogeneity of the group (Rautopuro & Vaisanen, 2001; Okun, Benin, & Brandt-Williams, 1996; and Milen & Berger, 1997). This results in the inability to generalize and replicate the study. There seems to be an overall need to conduct empirical studies especially in community colleges to be able to extrapolate information that would be relevant to the non-traditional student who at one point seemed to be the minority and now seems to be the majority (Rautopuro & Vaisanen, 2001). These contradictions and weaknesses are due in part to the lack of research studies involving a more diversified group of students throughout the country. Just using a convenient sample group might not reveal truly accurate data

that would show how to better impact student persistence through better retention strategies.

French and Oakes (2004) revised a scale which had originally been designed by Pascarella and Terenzini (1980) based on Tinto's (1975) theoretical framework (French & Oakes, 2004). The Institutional Integration Scale (IIS) was used to measure five propositions of college student academic and social integration (French & Oakes, 2004). The scale had two main properties (1) it was short and (2) it was simple to administer. The scale was based on Tinto's (1975) model of student departure, and it is a self-report scale of student perceptions of academic and social integrations. French and Oakes (2004) conducted a methodological study to measure Tinto's five propositions of college student academic and social integration. Two sample groups of students were tested with 773 in 1999-2000 and 1,734 in 2000-2001. French and Oakes' (2004) interpretation of their findings concluded that the changes made to the scale culminated in higher internal consistency reliability, higher item discrimination, and higher correlations among the subscale scores and between the subscale and total scale scores (French & Oakes, 2004).

Even though the results are consistent with previous findings that there is a high correlation between social and academic integration and student persistence, French and Oakes pointed out that future evaluation is needed because validation is limited to this study (French & Oakes, 2004). This represents a weakness in the reliability and validity of this study. Furthermore, this limits the generalization of the findings and the usefulness of the scale (French & Oakes, 2004).

Theoretical Framework

Review of the literature about the factors affecting retention of non-traditional students indicates that there is a high level of interest for school administrators, students, faculty, government agencies, employers, and researchers in higher education. As the review of the literature demonstrates, there is much theoretical literature on the subject of student persistence. Researchers, such as Tinto, Astin, and Bean, have devoted much of their time and effort to study student retention in higher education. However, as evidenced by their seminal theories and models, Tinto's (1987) Longitudinal Model of Individual Departure, Astin's (1985) Theory of Involvement, and Bean's (1990) Student Attrition Model have studied the traditional student body. It was not until Bean and Metzner's (1985) Non-Traditional Student Retention Model that the population sample of a community college was used to conduct this study (Rautopuro & Vaisanen, 2001; Stahl & Pavel, 1992; Summers, 2003).

As the population of non-traditional students increases, the need to conduct additional research in this area will also increase. The extensive amount of research that has been done on the topic of student retention will be enhanced by new research to further the study of retention that is of particular interest to school administrators, researchers, students, employers, and government agencies. Continuing the study of the theoretical literature on the topic of student retention is of great significance not only for school administrators, but also for retention pioneers who have devoted much time and effort to the study of student persistence for the betterment of the

student, the institution, the government, private sector organizations, and society as a whole.

After conducting a critical analysis of theoretical and empirical review of the literature about student retention, it was found that there were weaknesses in the internal and external validity of the studies due to the homogeneity of the groups. French and Oakes (2004) conducted a study to measure Tinto's (1975, 1987, & 1993) five propositions of college student academic and social integration. Findings of the study revealed a high level of reliability and validity of instruments as well as the usefulness of the revised *Institutional Integration Scale*. However, French and Oakes (2004) pointed out that future evaluation was needed because validation was limited to this study (French & Oakes, 2004). This was particularly true as it limited the generalization of the findings and the usefulness of the scale if applied to larger populations.

This review of the literature on student retention revealed that there is a gap in the literature as it pertains to the study of student retention of non-traditional students. There is also a need for more experimental design studies. Most of the research in this critical review of the literature pointed at studies that used a homogenous group of students. This group refers to the traditional type of student. The number of studies using the non-traditional student has been limited. More studies are needed particularly in the area of non-traditional students attending community and private colleges and their persistence to stay or depart from college.

The purpose of this research was to determine if academic integration, as measured by the students attending first year freshman courses—either the Strategies

for Success class or Psychology, and social integration, as measured by the number and intensity of faculty-student mentoring meetings, including academic advising, had significant influence on retention. The study also provided for further exploratory findings of the data with the expectation of finding a relationship between the various socio-demographic variables, academic and social integration, and retention.

Research Questions

1) Is there a relationship between academic and social integration and retention rates of non-traditional students?
2) Is there a relationship between academic integration and retention rates of non-traditional students?
3) Is there a relationship between Day and Night students receiving academic and social integration and retention rates?
4) Is there a relationship between socio-demographic characteristics, academic and social integration and retention rates of non-traditional students?

Research Hypotheses

H_1. Non-traditional college students who receive academic and social integration will have a significantly higher retention rate than the non-traditional students in the control group.

H_2. Non-traditional college students who receive academic and social integration will have a significantly higher retention rate than the non-traditional students who receive academic integration only.

H_3. Non-Traditional college students who receive academic integration only will have a significantly higher retention rate than those in the control group.

H_4. There will be significant difference between Day and Night students receiving academic and social integration and the control group.

H_5. There is a relationship between socio-demographic characteristics, academic and social integration and the rate of retention of non-traditional students.

Based on Tinto's (1987), Bean's (1982 & 1990), Astin's (1985), Bean and Metzner's (1985) conceptual models and constructs about student retention and the hypotheses created in this study, a hypothesized model was developed to study the impact academic and social integration have on retention for first semester, non-traditional students who participate in the experimental and control groups and retention. A hypothesized model (Figure 2-1) depicts the relationship between academic and social integration and retention. Other secondary analysis was performed to study the relationship between socio-demographic characteristics, academic and social integration, and retention.

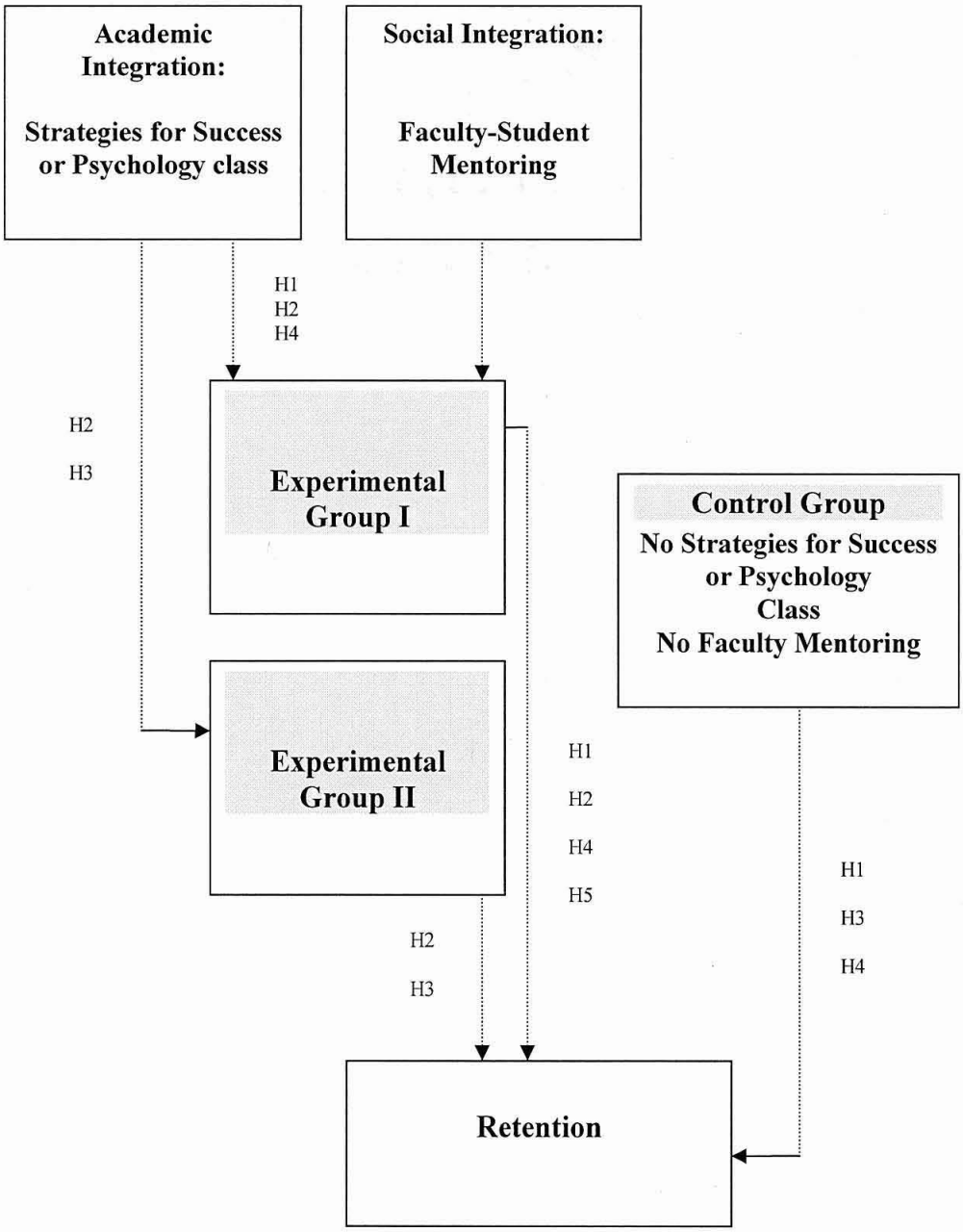

Figure 2-1. Hypothesized model of the relationships between academic and social integration and retention.

CHAPTER III

RESEARCH METHODOLOGY

In Chapter III, the proposed research methodology is presented to answer the research questions and to test the hypotheses. These hypotheses tested the relationships between academic and social integration and retention of day and evening non-traditional students in the experimental groups and retention rates of students in the control group. The research design, population, sampling plan, setting, instrumentation, procedures and methods of data analysis are presented in this chapter. The chapter concludes with an evaluation of research methods used for this study.

Research Design

A quantitative, experimental research design was conducted to answer research questions and to test the hypotheses. Also, an exploratory study was performed to investigate the relationship among socio-demographic characteristics, academic and social integration, and retention of non-traditional students. The independent variables were academic integration (A) and social integration (B). Students received the academic integration through either the Strategies for Success or Psychology courses. Students received the social integration through the faculty-student mentoring program. Students participating in the control group received neither academic nor social integration treatment, but instead were enrolled in the Introduction to Computers course. All students took this course as part of the University curriculum. The dependent variable was retention, which was measured at

the end of the summer and fall semesters to indicate whether the students returned or did not return to school.

This study included both day and evening students. All incoming degree-seeking freshmen students were randomly assigned to one of the four experimental groups or to the control groups.

The first experimental group was the day group of the first month of the summer semester. This group received treatment (A) consisting of attending first year freshman courses—either the Strategies for Success or Psychology class (A) only.

The second experimental group was the night group of the first month of the summer semester. This group received treatment (AB) consisting of attending first year freshman courses—either the Strategies for Success or Psychology class (A) and the Faculty-student mentoring (B).

The third experimental group was the day group of the first month of the fall semester. This group received treatment (AB) consisting of attending first year freshman courses—either the Strategies for Success or Psychology class (A), and the Faculty-student mentoring (B).

The fourth experimental group was the night group of the first month of the fall semester. This group received treatment (A) consisting of attending first year freshman courses—either the Strategies for Success or Psychology class (A) only.

The control groups in both the summer and fall semesters and during day and night classes did not receive the treatment. Instead, the control groups received the

Introduction to Computers course, which was part of the University's regular curriculum.

Table 3-1

Random Placement of Students

	EXPERIMENTAL DAY	EXPERIMENTAL NIGHT		CONTROL DAY	CONTROL NIGHT	
Summer	**E1DA**	**E2NAB**		**CD**		
Fall	**E3DAB**	**E4NA**			**CN**	

Table 3-1 depicts the random placement of students in experimental groups in either day or night classes. It also shows the random placement of students in the Introduction to Computers course.

Nomenclature: C = Control group
E = Experimental group
D = Day time students
N = Night time students
A = Academic Integration
B = Social Integration
1 = First experimental group
2 = Second experimental group
3 = Third experimental group
4 = Fourth experimental group

Example: E1DA = Experimental group #1, day students receiving academic integration in the first month of the study.

Population and Sampling Plan

Target Population

The target population for this study consisted of a convenient sample of all incoming degree-seeking freshmen students enrolled at the University in the summer and fall semesters of the 2007 academic year. The make up of the incoming degree-seeking freshmen students at the University are predominantly non-traditional students who hold a high school diploma or have obtained a GED diploma. Average age is between 22 and 27 years, and most students have family and job responsibilities. The mission of the University is to serve a diverse student population. In 2005, 25.2 percent of enrolled students were African Americans, 20.3 percent Hispanics, and the majority (70.7 percent) of the student population is female (Keiser Writes: Enhancing Student Writing, 2006). The University provides its students a unique academic modular delivery system where the students take only one class at a time for a period of four weeks. The University enrollment policy offers incoming students an opportunity to start school every month. Students complete as many modules as required by each program, i.e., 24 modules to complete an Associate of Science degree or 35 modules to complete a Bachelor of Arts degree. Approximately 60 to 80 students start the University every month. This delivery system provided the researcher with an opportunity to do this research study and compile the data from incoming degree-seeking freshmen students. Students enrolled at the University take one course every month (and four courses, over the duration of a semester). There are day and night classes every month. This means that every month there are two groups of students starting college—the day and the evening

population, with approximately 40 students starting in the day and 40 students in the evening. The study as well as the treatments received IRB approval from both Lynn University and Keiser University. All incoming students were asked to sign a consent form for participation in this study.

Accessible Population

The entire target population of degree-seeking incoming freshmen students were accessible to the researcher during the summer and fall semesters of the 2007 academic year. The admission policy of the University informs all incoming students, at application time, of the possibility of their participation in any or all studies conducted by the University for the purpose of improving its academic and retention services. It assures confidentiality of the data. It also informs students of the possible use of secondary data extracted from C2K.

Eligibility criteria

All degree-seeking incoming freshmen enrolling in either morning or night classes were eligible to participate in the study.

Exclusion criteria

1. Non-degree seeking incoming freshmen students.
2. Freshmen students wishing to enroll in online classes.

Setting

All eligible degree-seeking incoming freshmen students starting at the University during the summer and fall semesters of the 2007 academic year participated in the study. The University is a regionally accredited, private career school that offers masters, bachelors, and associates degrees. The University offers

39 degree programs to a diverse student body, most of whom are non-traditional students (Keiser Writes, 2006). Approximately 60 to 80 students start at the University every month. It was expected, as shown by historical enrollment records, that there would be between 60 to 80 new students starting college every month of the summer and fall 2007 semesters. Each semester consists of four months. All incoming freshmen students during the first month of the summer and the first month of the fall 2007 semester were included in the study. All eligible incoming degree-seeking freshmen students at Keiser received academic integration through the Strategies for Success or Psychology class or were placed in the control group either in the first or the second semester of their studies. All students enrolled at Keiser receive social integration through academic advising which consists of students meeting with the advisor once per semester. However, the students participating in this study received social integration at a higher intensity level as students communicated with their mentor on a weekly basis—via in person, e-mail or telephone.

Sampling Plan

The sampling of students for this study came from the entire eligible degree-seeking student population entering the University during the summer or fall 2007 semesters. Upon approval by IRB, all incoming degree-seeking freshmen students for a given month were randomly assigned during the process of registration to the experimental or to the control groups. A total of 95 students participated in the study. It was planned that in the event the anticipated number of incoming students was higher than expected, a second section of the experimental treatment (A), Strategies

for Success or Psychology class would have been added. All incoming degree-seeking freshmen students filled out data collection instruments as part of the entrance program, and therefore, all students participated in the completion of the surveys.

Instrumentation

This study utilized three instruments for data gathering. The first instrument was the *Socio-demographic Profile.* All students completed this profile during the first day of class (Appendix A). The second instrument was the *Institutional Integration scale, IIS.* All students completed the scale during the last week of the first month of class (Appendix A). The third instrument was the *Entry Level Academic Characteristics and Follow-up GPA and Retention.* This instrument consisted of a collection of data about the students gathered throughout the year and maintained in C2K, database. This form included students' academic records such as the student identification number, admission term, class enrolled in for the first term, day or night section, high school code—diploma or GED, Wonderlic entrance test score, and selected major were collected (Appendix C). This was retrieved during the second week of the start of the term. The *Entry Level Academic Characteristics and Follow-up GPA and Retention* was then used at the beginning of the second semester for the purpose of determining whether or not the student returned to school.

Description of the Socio-Demographic Profile

The Socio-Demographic profile was a 14 multiple-choice questionnaire developed by the researcher. It included questions about students' characteristics: student's identification number, year of birth, gender, race, ethnicity, marital status,

income level, employment status, number of children living at home, native language spoken at home, parents' highest level of education attained, family and work responsibilities (Appendix A, Part I - *Socio-demographic Profile*). Data obtained from the survey was used in exploratory analysis of their relationship to retention.

Description of the Institutional Integration

Institutional Integration was measured by the *Institutional Integration Scale (IIS)* revised version (French & Oakes, 2004). This scale has five subscales: (1) Academic and Intellectual Development, (2) Peer-Group Interactions, (3) Interactions with faculty, (4) Faculty Concern for Student Development and Teaching, and (5) Institutional and Goal Commitment. This was administered during the last week of the students' first module class (Appendix A). A summarized version of the scale is shown in Table 3-2.

Table 3-2

Constructs of the Institutional Integration Scale (IIS)

Part	Subscale	Items
1.	Academic and intellectual development	11
2.	Peer-group interactions	9
3.	Interactions with faculty	6
4.	Faculty concern for student development and teaching	4
5.	Institutional and goal commitment	4

The *Institutional Integration Scale, (ISS)* is "based on Tinto's model of college student withdrawal" (French & Oakes, 2004, p. 88). The *ISS*, originally designed by Pascarella and Terenzini (1980) and later revised by French and Oakes (2004), measures five constructs of college student retention as they refer to academic and social integration (French & Oakes, 2004). The revised scale contains 34 items

which are further divided into five subscales—(1) academic and intellectual development, (2) peer-group interactions, (3) interactions with faculty, (4) faculty concern for student development and teaching, and (5) institutional and goal commitment. Changes made to the revised *IIS* version include the addition of four items. Negatively worded items were positively worded and rewritten, and the wording of some items was changed to improve the readability (French and Oakes, 2004). A total of 34 items are measured by a 5-point semantic differential rating scale with anchors ranging from "strongly disagree" (1) to "strongly agree" (5). See Appendix A.

Reliability

The reliability of the *Institutional Integration Scale* in the French and Oakes (2004) study was tested through confirmatory factor analysis (CFA) and the coefficient alpha was .92 for the revised version of the *IIS* (French & Oakes, 2004). The coefficient alphas for the individual sections of the scale were: "Peer-group interactions = .84; Interactions with faculty = .89; Faculty concern for student development and teaching = .88; Academic and intellectual development = .82, and Institutional and goal commitment = .76" (French & Oakes, 2004, p. 91). The population sample for this study included first year freshmen students with mean age of 19.21, standard deviation of 0.86 and ethnic backgrounds as follows: Caucasian 87 percent, African American 3.7 percent, Asian American 3.7, Hispanic 0.20 percent, Native American 2.0 percent, and 3.5 percent of students did not wish to report their ethnicity (French & Oakes, 2004). In French and Oakes (2004), the participating students were attending a state university in the midwestern region of the United

States. Coefficient alphas were analyzed for the total *IIS* scale and each of the five subscales.

Validity

French and Oakes (2004) reported a high level of reliability and validity in the revised version of the *IIS*. This was documented by the large sample of 1,734 participants enrolled in a large state university in the Midwestern part of the United States. Student body population included Caucasian 87 percent, African American 3.7 percent, Asian American 3.7 percent, Hispanic 0.20 percent, Native American 2.0 percent, and 3.5 percent of students did not wish to report their ethnicity (French & Oakes, 2004). Confirmatory factor analysis revealed that the original theoretical model may be problematic; revisions to the model resulted in improved fit (French & Oakes, 2004).

Description of the Entry Level Academic Characteristics and Follow-up GPA and Retention

The researcher retrieved *Entry Level Academic Characteristics* and *Follow-up GPA and Retention* data from records data in the University's C2K database. The *Entry Level Academic Characteristics* included all incoming degree-seeking freshmen students' identification number, admission term, class enrolled in for the first term, day or night section, high school code—diploma or GED, Wonderlic entrance test score, and major. This was retrieved during the second week of the start of the term. The *Follow-up GPA and Retention* data was retrieved by the researcher from the school C2K database by documenting the students' semester GPA and determining whether the students returned or did not return to school the following semester. This

was done by retrieving current attendance for the second semester for all the students who participated in the study during the prior semester and who were currently in attendance and back in school. See Appendix B.

Reliability

Reliability of records data was done by randomly pulling out students' hard copy files to verify that the information being pulled from C2K database was accurate.

Validity

Validity of records data was accomplished by comparing reports from C2K database.

Procedures: Ethical Considerations and Data Collection Methods

All the ethical considerations for protecting participants as well as the methods used for collecting data are described in this section.

1. Permission to use the *Institutional Integration Scale* has been obtained (Appendix D).
2. Submitted an application and protocol to Lynn University's Institutional Review Board (IRB). Approval was received on May7, 2007.
3. Permission from Keiser University to conduct the study with the incoming degree-seeking freshmen students of a given semester during the summer and fall 2007 was obtained (Appendix C).
4. Consent from students for participation in the course and the use of secondary data was (Appendix C).
5. Data collection began after obtaining approval from Lynn's IRB committee.

6. The participants were all incoming degree-seeking freshmen students for the Summer and Fall 2007 semesters.
7. The researcher trained two experienced faculty members who were involved in the teaching of the Strategies for Success or Psychology courses.
8. The researcher trained two experienced faculty members who were involved in the delivery of faculty-student mentoring services.
9. The researcher explained the purpose of the study to the instructors.
10. Data was collected during the study and no longer than one year after IRB approval.
11. All participants completed the Socio-Demographic profile in the classroom during the first class session. This took less than 10 minutes to complete.
12. All participants completed the *Institutional Integration Scale* during the last week of the first class. This took approximately 10 minutes to complete.
13. All participants were assigned codes by numbers on the data form to maintain anonymity.
14. After the period of data collection was over, the IRB was informed of termination of the project. IRB Form 8 was submitted to the IRB.
15. The researcher created a password-protected database. The researcher entered the data into SPSS. All original surveys were kept in a locked filing cabinet in the researcher's office.
16. The data was kept confidential.
17. All results were reported as aggregate data.
18. Data was kept on site for one year and will be destroyed after five years.

Methods of Data Analysis

Upon completion of the data collection, the researcher analyzed the data through the Statistical Package for Social Sciences (SPSS) version 14 in order to respond to the research questions and test the hypotheses. Statistical tests were run including measures of central tendency, frequency distribution, two and three group comparisons, independent t-tests, Chi-Square, ANOVA with post hoc comparisons, and multiple, binary logistic regression analyses was used in this study.

To answer Research Question 1 about the existence of the relationship between academic and social integration and retention rates of non-traditional college students who received or did not receive social integration intervention by faculty mentoring, statistical analysis of collected data was performed. The statistical analysis measured the retention rates of the population that includes the group that received the social integration intervention by means of the faculty-student mentoring, the group that did not receive the intervention, and the control group. Descriptive statistics of variables including Chi-Square test and ANOVA with possible post hoc comparisons for other variables were performed.

To answer Research Question 2 and to see if there was a relationship between academic integration and retention rates of non-traditional students, statistical analysis of data was performed. The analysis needed to measure the retention rates of the population that includes the group that received the academic integration intervention by participating either in the Strategies for Success or Psychology course, the group that did not receive the academic integration intervention, and the

control group. The analysis was based on descriptive statistics of the variables included, Chi-Square test and ANOVA with possible post hoc comparisons for possible effects of other variables in the study.

To answer Research Question 3 and to see if there was a relationship between Day and Night students and retention rates of non-traditional students statistical analysis of data collected was performed. The analysis included the Day and Night student groups that received the social integration intervention by means of the faculty-student mentoring, as measured by the number of faculty-student mentoring meetings, as compared to the groups that did not receive the social integration intervention and their consequent retention rates. The analysis was based on descriptive statistics of the variables included, Chi-Square test and ANOVA.

To answer Research Question 4 about the relationship between socio-demographic characteristics, academic and social integration, and retention rates of non-traditional students, statistical analysis of collected data was performed. Statistical analysis of several groups based on their participation in the academic or social integration was done. The analysis determined if there were statistically significant differences between the groups and possibly to identify the contributing factors for the differences. A three-group comparison on categorical variables using Chi-Square and ANOVA was used.

Hypothesis 1 was designed to test the retention rate of the non-traditional students who participated in the experimental Strategies for Success or Psychology course and social integration by means of the faculty-student mentoring as compared

to those non-traditional students who did not receive the intervention. A three-group ANOVA with post hoc comparison was utilized.

Hypothesis 2 was designed to test the significantly higher retention rate of non-traditional college students moving into their second semester of college after participating in the Strategies for Success or Psychology course and faculty-student mentoring during their first semester, as compared to non-traditional college students who participated in the Strategies for Success or Psychology course only. Chi-Square test for significant differences with post hoc comparisons was utilized.

Hypothesis 3 was designed to test the effects on non-traditional students receiving academic integration intervention by attending the Strategies for success or Psychology course only to their retention rates. Chi-Square test for significant differences with post hoc comparisons was utilized.

Hypothesis 4 was designed to test if there was significant differences between Day and Night students in the two experimental groups receiving treatment and the control group. Chi-Square test was performed.

Hypothesis 5 was designed to show that there was a relationship between socio- demographic characteristics, academic and social integration, and the rate of retention of non-traditional students. An explanatory (correlational) design with Binary Logistic regression analysis was utilized.

Evaluation of Research Methods

In this section, internal and external validity were examined in order to discuss the strengths and weaknesses of this study. Internal validity refers to

questions the researcher may have about whether the intervention produced the sought out results or were there other factors that affected the end results (Bloom, Fischer & Orme, 2003). External validity refers to the potential of being able to generalize findings in order to apply to other situations (Bloom, Fischer & Orme, 2003).

Internal Validity - Strengths

1. A strength of the internal validity of the study was the random assignment of students to either the experimental Strategies for Success or Psychology course or the control group.
2. A strength of internal validity of the study was that the instrument—the institutional integration scale has tested reliability and established construct validity for other similar studies.

Internal Validity - Weaknesses

1. A weakness of internal validity of the original study was that the instrument was used with traditional students, which may decrease the original validity of the instrument when used with non-traditional students.
2. A weakness of internal validity could have been experimental mortality for those students who may drop out before completion of the study.
3. A weakness of the study was the population sample of 95 students, which was limited to new students starting during the first month of the Summer semester and first month of the Fall 2007 semester.

External Validity - Strengths

1. A strength in external validity of the study was that the entire target population of incoming degree-seeking freshmen students was accessible to the researcher during the first month of the Summer semester and first month of the Fall 2007 semester.
2. A strength in external validity of the study was that all accessible population was included, making it a strong design and allowing for generalizability.
3. A strength in external validity was that all participants were randomly selected.
4. A strength in external validity of the study was that the study took place in a natural environment for the participants.

External Validity - Weaknesses

1. A weakness in the external validity of the study was the rather small sample size due to enrollment of students during the summer semester lower than it was historically anticipated.
2. A weakness in the external validity of the study was the use of one setting.

Chapter III presented the research methodology, including the research questions, hypotheses, population, sampling plan, instrumentation, data collection methods, ethical considerations, methods of data analysis, and evaluation of research methods. Chapter IV presents the results of this study.

CHAPTER IV

RESULTS

Chapter IV presents the results of this research study of the factors influencing retention of non-traditional undergraduate students. It provides the analysis of the data for the research questions in this study. This includes (1) demographic information on participants, (2) psychometric evaluation for the scale and subscales, and (3) an evaluation of each of the research questions and hypotheses.

The target population for this study consisted of a convenient sample of 95 freshmen students who enrolled at the University during the first month of the summer semester and the first month of the fall semester. All incoming degree-seeking freshmen students were randomly assigned to the experimental or to the control groups during the process of registration at the time of enrollment.

Sample Demographics

Inherent in the mission of the University serving a diverse student population, the data analysis for this study revealed that the student sample was representative of the university population as a whole. In particular, the findings showed that the student average age group is 18 – 30; 73% of the students are female, and 27% represent the male student population. The students' marital status is subdivided as follows: 67.4% of the students are single; 13.7% are married; 8.4% are single head of household; 7.4% are divorced; 3.2% are separated. Data analysis further showed that at least 87.4% of the active students have job responsibilities. Most of these non-traditional students maintain family and job responsibilities while attending school.

Table 4-1 gives the demographic profile of sample according to gender, race and ethnicity. Data analysis showed that for the female student sample population, the highest percentage within race and ethnic group was 75% for African American and the lowest percentage was 58.8% for White. For the male student sample population, the highest percentage within race and ethnic group was 41.2% for White and the lowest percentage was 25% for African American.

Table 4-1

Demographic Profile of Sample Based on Race and Ethnicity

	Gender		
Race & Ethnicity	**Male**	**Female**	**Total**
White	7 (7.4%)	10 (10.5%)	17 (17.0%)
African American	9 (9.5%)	27 (28.4%)	36 (37.9%)
Hispanic	6 (6.3%)	16 (16.8%)	22 (23.1%)
Other	4 (4.2%)	16 (16.8%)	20 (21.0%)
Total	26 (27.4%)	69 (72.5%)	95 (100%)

Table 4-2 gives a description of sample according to the students' age groups. On average, non-traditional students are between the ages of 18 – 25. Student age plays a very important role in student retention as older students have multiple life responsibilities to manage. Students with family and job responsibilities might decide not to stay in school if they need to work extra hours to support their families. Summer (2003) indicates that the older the student, the higher the chances of withdrawing from school.

Table 4-2

Demographic Profile of Sample According to Age Group

Age Group	Frequency	Percent
18 – 21	42	44.2%
22 – 30	33	34.7%
31 – 40	14	14.7%
41 – 50	6	6.3%
Total	95	100%

Table 4-3 gives a description of the sample according to marital status. Student marital status is important, and one can see that non-traditional students need to balance not only school responsibilities, but also family as well as job responsibilities. Categories mentioned in the marital status question included: single, married, single head of household, divorced and separated. Data analysis showed that 67% of the students are single and an aggregate 33% includes students who are married, head of household, divorced or separated.

Table 4-3

Demographic Profile of Sample According to Marital Status

Status	Frequency	Percent
Single	64	67.4%
Married	13	13.7%
Single head of household	8	8.4%
Divorced	7	7.4%
Separated	3	3.2%
Total	95	100%

Table 4-4 gives a summary of sample according to the number of children living at home. Given that non-traditional students or adult learners are typically 25 years or older, may have children, may or may not be single parents, may be married, work full or part time and may be the sole supporters of a family (King, Anderson & Corrigan, 2003), the non-traditional student may be more vulnerable to withdrawing from school because of the many family responsibilities surrounding that student. The statistical data that follows gives an indication of the number of children living at home. This could be a burden to the student and one that weighs heavily as the student tries to balance time between family, work and school.

Table 4-4

Demographic Profile of Sample According to the Number of Children Living at Home

Children living at home	**Frequency**	**Percent**
One child	26	27.0%
Two children	23	24.2%
Three or more children	13	13.7%
No children	33	34.7%
Total	95	100%

Table 4-5 presents a summary of students' household income per year. Financial obligations place a responsibility on any student, but in particular to a non-traditional student who is dealing with family, work, school and low annual income. As illustrated in Table 4-5, 43.2% of the student sample has annual household incomes between $0 and $20,000.

Table 4-5

Student's Household Income per Year

Income	Frequency	Percent
$0 - $20,000	41	43.2%
$21,000 - $40,000	33	34.7%
$41,000 - $60,000	6	6.3%
$61,000 - $80,000	7	7.4%
over $80,000	5	5.3%
No response	3	3.1%
Total	95	100%

Table 4-6 gives a summary of the different languages the student sample population may be exposed to at home. Data analysis showed that English is the first language for 65.3% of the sample student population and 35% speak other languages.

Table 4-6

Native Language Spoken in Student's Home

Native Language	**Frequency**	**Percent**
English	53	55.8%
Spanish	17	17.9%
French	4	4.2%
Creole	17	17.9%
Other	4	4.2%
Total	95	100%

The educational level of the students' parents is an important factor in studying student retention. Students who come from households of parents who have attended college may have different expectations of what a college experience is all about as compared to first generation college students who have not had the same exposure. The student whose parents have a college education may have provided a more nurturing environment as it relates to studying habits and learning experiences. Table 4-7 shows the statistical analysis of parents' educational level for students in the sample.

Table 4-7

Parents' Highest Level of Education

School level	**Father**	**Mother**
Middle School	15 (15.7%)	13 (12.0%)
High School	41 (42.8%)	46 (48.4%)
College	28 (29.4%)	28 (29.4%)
Graduate School	11 (11.5%)	8 (9.0%)
Total	95 (100%)	95 (100%)

Another important factor in this study of student retention was that of the student's ability to handle other responsibilities besides school. A non-traditional student is typically involved not only in school, but may also maintain a job and a family as well. According to the statistical analysis of this study, 87.4% of the student population had jobs that occupied between 4 to 8 hours of their time per day. Table 4-8 outlines the hours the student was at work on a daily basis.

Table 4-8

Students' Job Responsibilities Outlined in Hours Worked per Day

Hours worked	**Frequency**	**Percent**
1 - 2 hours per day	3	3.2%
2 – 4 hours per day	6	6.3%
4 – 6 hours per day	28	29.5%
over 8 hours a day	45	47.4%
No response	13	13.7%
Total	95	100%

Similarly, it was interesting to compare the amount of study time the same students were able to devote given the other responsibilities of going to school, holding a job, and attending to the needs of their family members. Table 4-9 gives a summary of student's study time per week. Even with the many other duties these students had, they were still able to devote time to their studies. From this analysis, one could infer that this was a group of young students who were highly motivated and committed to balancing not only student life, but also family and job responsibilities.

Table 4-9

Students' Study Time Outlined in Hours per Week

Hours Studied	Frequency	Percent
1 – 2 hours per week	22	23.2%
3 – 4 hours per week	46	48.4%
5 – 6 hours per week	21	22.1%
over 6 hours per week	6	6.3%
Total	95	100%

Psychometric Evaluation of Instruments

Institutional Integration Scale (IIS)

The *Institutional Integration Scale* (*IIS*), originally designed by Pascarella and Terenzini (1980) and later revised by French and Oakes (2004), measures five constructs of college student retention as they refer to academic and social integration (French & Oakes, 2004). The revised scale contains 34 items, which are further divided into five subscales. A total of 34 items are measured by a 5-point semantic differential rating scale with anchors ranging from "strongly disagree" (1) to "strongly agree" (5). The calculated Cronbach's alpha for the 34 items in this study was .95. The results of this study were consistent with French and Oakes' previous findings of coefficient alphas of .83 and .92 (French & Oakes, 2004). Coefficient alphas in this study for the subscales were also consistent with previous findings. French & Oakes (2004) noted the following coefficient alphas for the subscales: (1) Academic and Intellectual Development was .82;

(2) Peer-Group Interactions was .84; (3) Interactions with Faculty was .89; (4) Faculty Concern for Student Development was .88, and (5) Institutional and Goal Commitment was .76.

Table 4-10 presents coefficient alphas for the five subscales of the *Institutional Integration Scale* (*ISS*) for this study. Alpha coefficient results range from .92 being the highest to .70 the lowest. The results were similar to previous survey results conducted by French and Oakes.

Table 4-10

Coefficient Alpha Results of the Institutional Integration Scale (IIS)

Part	Subscale	Items	Alphas
1.	Academic and intellectual development	11	.78
2.	Peer-group interactions	9	.90
3.	Interactions with faculty	6	.92
4.	Faculty concern for student development	4	.92
5.	Institutional and goal commitment	4	.70

Analysis of Data

This section presents the analysis of the four research questions and the specific hypotheses that were tested.

Research Question 1

Is there a relationship between academic and social integration and retention rates of non-traditional students?

H1: Non-traditional college students who receive academic and social integration will have a significantly higher retention rate than the non-traditional students in the control group.

A chi-square test was conducted and analyzed to determine if students who received academic and social integration would have a significantly higher retention rate than the non-traditional students in the control groups. Table 4-11 presents the relationship between academic and social integration and retention rates of non-traditional students. Statistical data showed there was no significant difference between the groups as noted in the chi-square test results, $\chi^2(2, N = 95) = 1.358, p = .507$. This may have been due to the small sample size in this particular study. It also seems that the intensity of the intervention itself was already present as part of the University's established retention strategies as suggested in Hypothesis #2.

Table 4-11

Relationship Between Academic and Social Integration and Retention vs. Control Groups

Type of Intervention	**Frequency**	**Student Status**	
		Active	**Drop**
Academic Integration	32	68.8%	31.3%
Academic and Social Integration	31	80.6%	19.4%
Control	32	78.1%	21.9%

N=95
$\chi^2(2, N = 95) = 1.358, p = .507$

A regression analysis was performed to determine how much variation in retention rates of non-traditional students could be explained for the students receiving the academic and social integration intervention as compared to the control group. Table

4-12 presents Model 1 of the regression analysis for H_1. Model 1, R indicates the linear correlation between the observed and model-predicted values of the dependent variable. Its small value of .90 indicates a weak relationship between academic and social integration on retention or completion rates. In the same way, a lower R^2 equally indicates that academic and social integration have a very small effect on retention or completion rates.

Table 4-12

Model Summary of Regression Analysis for H_1.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.90(a)	.008	-.003	.431

Table 4-13 shows the regression indicating no variation between the Sum of Squares (.141) and the Mean Square (.141). Meanwhile, the residual shows that the intervention had no significant effect on retention rates.

Table 4-13

Model Summary of Regression Analysis for H_1 with Sum of Squares and Mean Square

Model	Sum of Squares	df	Mean Square	F	Significance
1 Regression	.141	1	.141	.756	.387
Residual	17.291	93	.186		
Total	17.432	94			

Table 4-14 shows from the coefficients, the significance of .000 and the significance of value F statistically is less than 0.05, which means that the variation explained by the model is not due to chance.

Table 4-14

Model Summary of Regression Analysis for H_1 Including Coefficients

Model	Unstandardized Coefficients		Standardarized Coefficients		
	B	Std. Error	Beta	t	Significance
1 (Constant)	1.336	.117		11.464	.000
Academic and Social Integration	-.047	.054	-.90	-.870	.387

H_2: Non-traditional college students who receive academic and social integration will have a significantly higher retention rate than the non-traditional students who receive academic integration only.

Table 4-15 shows that students who received the treatment were retained at higher levels than other groups and that this was due to the intervention; however, statistically, the study failed to confirm those results. Chi-square test results reflect no significance, $\chi^2(1, N = 63) = 1.176, p = .278$. The sample size may have played a factor in this particular study, thereby affecting the results.

An important fact to mention is that one of the retention strategies at this institution is to call students every time they are absent. It is school policy for faculty

members to call students whenever students are absent to make sure students are fine and to let them know what their assignment is for the next day. This policy is closely aligned to the intervention in this study. This provides students with that special attention and special touch only a small private school can provide. Perhaps the intervention in this study needed to be more intensive.

Table 4-15

Relationship Between Academic and Social Integration vs. Academic Integration only

Treatment Received		Number of	Status	
Academic	**Social**	**Participants**	**Active**	**Drop**
Yes	Yes	31	25 (80.6%)	6 (19.4%)
Yes	No	32	22 (68.8%)	10 (31.2%)

N = 63
$\chi^2(1, N = 63) = 1.176, p = 0.278$

Research Question 2

Is there a relationship between academic integration and retention rates of non-traditional students?

H3: Non-traditional college students who receive academic integration only will have a significantly higher retention rate than those in the control group.

Table 4-16 reveals that there was no statistically significant difference as it related to student retention between the students receiving the intervention and the control groups. Chi-square test results revealed no significant difference, $\chi^2(1, N = 64) = .721$, $p = .396$. Again, the special attention that was provided to all students at this institution was closely aligned to the intervention.

Table 4-16

Relationship Between Academic Integration and Retention Rates vs. Control Groups

Group	Number of Participants	Status	
		Active	Drop
Academic Integration	32	22 (68.8%)	10 (31.3%)
Control	32	25 (78.1%)	7 (21.9%)

N = 64
$\chi^2(1, N = 64) = .721, p = .396$

Research Question 3

Is there a relationship between Day and Night students receiving academic and social integration and retention rates?

H_4: There will be significant difference between Day and Night students receiving academic and social integration and the control group.

Table 4-17 shows the relationship between Day and Night students receiving academic and social integration and the control groups and retention rates. Regression analysis was performed to determine how much variation in Day and Night student retention could be explained by students receiving the treatment intervention compared to the control groups. The results showed no difference between treatment and the control groups for the Day students. While it appeared that there might have been a negative relationship for both the treatment and control groups for the Night students, it was not shown statistically $R^2 = .104$ ($F = .011$, $p = .431$).

Table 4-17

Relationship Between Academic and Social Integration vs. Control Groups – Day and Night Students

Group	Shift Day/Night	Number of Participants	Status	
			Active	Drop
Academic & Social	Day	17	16 (94.1%)	1 (5.9%)
Control	Day	17	14 (82.4%)	3 (17.6%)
Academic & Social	Night	14	9 (64.3%)	5 (35.7%)
Control	Night	15	11 (73.3%)	4 (26.7%)

N=95

R indicates the linear correlation between the observed and model-predicted values of the dependent variable—retention rates. Its value of .104 indicates the presence of a relationship between Day and Night students on retention or completion rates. In the same way, the R^2 of .011 equally indicates that Day and Night students have a small effect on retention rates. Table 4-18 presents the model summary of regression analysis for H_4.

Table 4-18

Model Summary of Regression Analysis for H_4

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.104(a)	.011	.000	.431

Table 4-19 shows the regression indicating no variation between the Sum of Squares (.187) and the Mean Square (.187). Meanwhile, the residual shows that the intervention had no significant effect on retention rates.

Table 4-19

Model Summary of Regression Analysis for H_4 with Sum of Squares and Mean Square

Model	Sum of Squares	df	Mean Square	F	Significance
1 Regression	.187	1	.187	1.009	.318(a)
Residual	17.244	93	.185		
Total	17.432	94			

From the coefficients, the significance of .000 and the significance of value F statistically was less than 0.05, which means that the variation explained by the model was not due to chance. Table 4-20 shows the model summary of regression analysis for H_4, including coefficients.

Table 4-20

Model Summary of Regression Analysis for H_4 Including Coefficients

Model	Unstandardized Coefficients		Standardarized Coefficients		
	B	Std. Error	Beta	t	Significance
1 (Constant)	1.111	.138		8.071	.000
Academic and Social Integration D-N	.089	.088	.104	1.005	.318

Research Question 4

Is there a relationship between socio-demographic, academic and social integration and retention rates of non-traditional students?

H_5: There is a relationship between socio-demographic characteristics, academic and social integration and the rate of retention of non-traditional students.

For this study, the explored student socio-demographic characteristics were gathered through the means of the socio-demographic profile survey that was completed by all the students who participated in this study. A regression analysis was performed to determine how much variation in retention rates could be explained by socio-demographic variables, academic and social integration of non-traditional students. While socio-demographic variables account for 35% of the variation in retention, these results merely approach the threshold of significance, $R^2 = .351$, $F=1.721$, $p= (.067)$.

Table 4-21 shows the regression analysis model summary indicating the strength of the relationship between the variables. It illustrates a strong relationship between socio-demographic characteristics and academic and social integration and their impact on student retention rates.

Table 4-21

Model Summary of Regression Analysis for H_5

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.593(a)	.351	.147	.410

R indicates the linear correlation between the observed and model-predicted values of the dependent variable. Its value of .593 indicates the presence of a good relationship between socio-demographic characteristics, academic and social integration and retention rates of non-traditional students. R^2 shows that the model explains about half of the variation in retention.

The regression analysis indicates that only 4.915 sums of squares for regression, and 9.071 residual sums of squares. This means that fewer of the variables (less than half or 45%) explain semester completion or student retention. The significant value of F statistically is less than 0.05. Table 4-22 shows the model summary of regression analysis for H_5.

Table 4-22

Model Summary of Regression Analysis for H_5 with Sum of Squares and Mean Square

Model	Sum of Squares	df	Mean Square	F	Significance
1 Regression	4.915	17	.289	1.721	.067
Residual	9.071	54	.168		
Total	13.986	71			

In further analysis, this research found the following socio-demographic variables that contributed significantly to explaining the variance in retention were: (1) age group of participant; (2) native language spoken at home; (3) student's father's educational level; (4) student's mother's educational level; and (5) number of hours the student worked daily. These were constant predictors that appeared to have significant impact on student retention. Table 4-23 presents the list of the constant student retention predictors and their significance to retention as found in this study.

Table 4-23

Student Retention Predictors Affecting Student Retention

Predictors	**Beta**	**Significance**
1 (Constant)		.003
Age group	-.353	.027
Gender	-.080	.543
Race & Ethnicity	.065	.622
Marital Status	.027	.865
Annual Income	-.009	.945
Children	-.127	.312
Eng. first language	.073	.743
Native language	-.430	.059
Father's education	.327	.014
Mother's education	-.338	.022
Family responsibilities	.108	.428
Job responsibilities	-.087	.508
Work hours	.257	.042
Study hours	.162	.238
Leisure hours	-.192	.121
Academic & Social Integration	-.011	.933

The significance section of the coefficients is shown on Table 4-23. It shows that there were several predictors in the model, as well as several non-significant coefficients, indicating that these variables did not contribute much to the model. To determine the relative importance of the significant predictors, the standardized coefficients were examined. Even though age group, educational level of mother, and educational level of father have low significant values, they actually contributed more to the model because they have larger absolute standardized coefficients. In the same way, native language and working hours were found to be very significant predictors of a relationship between socio-demographic characteristics, academic and social integration and retention rates of non-traditional students. In summary, native language was the greatest significant variable, while annual income was the least important variable.

Table 4-24

Model Summary of Regression Analysis for H5 Including Coefficients and Significance

Model	Unstandardized Coefficients		Standardarized Coefficients		
	B	Std. Error	Beta	t	Significance
1 (Constant)	1.792	.566		3.166	.003
Age group	-.179	.079	-.353	-2.276	.027
Gender	-.077	.126	-.080	-.612	.543
Race & Ethn	.028	.057	.065	.496	.622
Marital Status	.012	.070	.027	.171	.865
Annual Inc.	-.004	.051	-.009	-.070	.945
Children	-.047	.046	-.127	-1.021	.312
Eng. first lang	.068	.207	.073	.329	.743
Native lang.	-.144	.075	-.430	-1.928	.059
Father's educ	.167	.066	.3272	.530	.014
Mother's educ	-.179	.076	-.338	-2.358	.022
Family resp.	.051	.064	.108	.799	.428
Job resp.	-.329	.493	-.087	-.667	.508
Work hrs.	.141	.067	.2572	.085	.042
Study hrs.	.088	.074	.1621	.192	.238
Leisure hrs.	-.098	.062	-.192	-1.573	.121
Academic and Social Integration	-.006	.066	-.011	-.085	.933

For most predictors, the values of the partial and part correlations dropped significantly from the zero-order correlation indicating that much of the variances such as gender, race, marital status, annual income, number of children, English first language, time spent with family responsibilities, and academic and social integration as indicators of completion were also explained by other variables. In the same way, native language, age group, education levels of father and mother, working hours, and studying hours strengthened their importance as variables that have an impact on completion. Meanwhile, job responsibilities and leisure time remained stable. Table 4-25 shows the list of predictors, Eigenvalue, Condition Index, and their significance on retention rates.

Table 4-25

Student Retention Predictors Including Eigenvalue, Condition Index, and Significance on Retention Rates

Predictors	**Eigenvalue**	**Condition Index**	**Significance**
1 (Constant)	14.804	1.000	.003
Age group	.505	5.413	.027
Gender	.369	6.334	.543
Race & Ethnicity	.252	7.668	.622
Marital Status	.176	9.165	.865
Annual Income	.154	9.813	.945
Children	.133	10.551	.312
Eng. first language	.125	10.864	.743
Native language	.094	12.561	.059
Father's education	.092	12.663	.014
Mother's education	.083	13.320	.022
Family responsibilitie	.073	14.273	.428
Job responsibilities	.060	15.668	.508
Work hours	.038	19.866	.042
Study hours	.021	26.566	.238
Leisure hours	.016	30.726	.121
Academic and Social Integration	.005	54.219	.933

As shown on Table 4-25, Eigenvalues indicate the strength of the relationship between the variables and their effect on student retention. The following socio-demographic variables continued to show their significant impact on retention: (1) age group of participant; (2) native language spoken at home; (3) student's father's educational level; (4) student's mother's educational level; and (5) number of hours the student worked daily.

Table 4-26 shows Eigenvalues, tolerance level and condition indices. The tolerance level represent the percentage of the variance in a given predictor that cannot be explained by the other predictors. Thus, the small tolerance levels showed that between 70% and 90% of the variance in any given predictor could be explained by the other predictors. This equally indicated that their presence or not, did not contribute significantly to student retention rates. Table 4-26 shows a collinearity diagnostic indicating several of the variables that had low tolerance values.

Table 4-26

Collinearity Diagnostics of Student Retention Predictors

Predictors	Eigenvalue	Tolerance	Condition Indices
1 (Constant)	14.804		1.000
Age group	.505	.508	5.413
Gender	.369	.710	6.334
Race & Ethnicity	.252	.706	7.668
Marital Status	.176	.499	9.165
Annual Income	.154	.748	9.013
Children	.133	.794	10.551
Eng. first language	.125	.249	10.864
Native language	.094	.246	12.561
Father's education	.092	.734	12.663
Mother's education	.083	.594	13.320
Family responsibilities	.073	.666	14.273
Job responsibilities	.060	.713	15.668
Work hours	.038	.806	19.866
Study hours	.021	.663	26.566
Leisure hours	.016	.819	30.726
Academic and Social Integration	.005	.789	54.219

The collinearity diagnostics shown on Table 4-26 confirmed that there were issues with multicollinearity as indicated in the EigenValue. Several eigenvalues were close to 0.000, indicating that the predictors were highly intercorrelated and that small changes in the data values could lead to large changes in the estimates of the coefficients. The condition indices were computed and values greater than 15 could indicate a possible problem with collinearity; greater than 30, could indicate a higher possibility of a problem with collinearity (Wadsworth, 2007). Three of the indices were greater than 15, and two were larger than 30, suggesting a problem with collinearity. Running the regression above and dropping the variables with low tolerance values fixed this collinearity problem. However, the data obtained after running the regression did not show a huge difference; therefore, there were no significant changes to report that might alter these results.

Chapter IV presented a description of sample demographics, psychometric evaluation of measurement scale and subscales, and an evaluation and results of each of the research questions and hypotheses. Study findings revealed that the student sample was representative of the university population as a whole. The student population, in particular, was represented by 73% female students and 27% male; 67% of the students were single; 13.7% married; 8.4% single head of household; 7.4% divorced; and 3.2% separated. Data analysis further showed that 87.4% of the active students have job responsibilities. This means that most non-traditional students are able to balance multiple life roles while maintaining academic standards.

The Psychometric Evaluation of the Institutional Integration Scale, (IIS) revealed the calculated Cronbach's alpha for the 34 items in this study was .95. The results of this study were consistent with French and Oakes' previous findings of coefficient alphas of .83 and .92. Further, the analysis of the data of the four research questions and the specific hypotheses that were tested revealed the following findings.

Statistically, the study failed to confirm Hypotheses 1, 3, and 4. The reasons for these results might have been the sample size and the presence of a confounding variable, which is part of an already instituted retention strategy at this University. Even though Hypothesis 2 failed to statistically confirm results, data analysis shows that the students who received the intervention were retained at higher levels than those students who received academic integration only. Hypothesis 5 revealed a strong relationship between socio-demographic characteristics and academic and social integration and their impact on retention rates of non-traditional students. These findings are discussed further in Chapter V.

Chapter V provides a discussion of the findings in terms of the interpretations, practical implications, conclusions, limitations, and recommendations for future studies about the factors influencing retention of non-traditional undergraduate students and effective retention strategies.

CHAPTER V

DISCUSSION

Chapter V presents a discussion of the results. Most of the research that has been done in the area of student retention has been geared to a homogeneous group of students abstractly referred to as the traditional college student. Since the number of studies about non-traditional students has been limited, the focus of this research was to study the non-traditional student, the adult student who tries to balance school, work and family responsibilities to the best of his or her ability. In particular, the purpose of this quantitative, experimental research study of the factors influencing retention of non-traditional undergraduate students was to determine if academic integration, as measured by the students attending first year freshman courses in either the Strategies for Success class or Psychology class, and social integration, as measured by the number and intensity of faculty-student mentoring meetings including academic advising, had a significant influence on retention. This study also provided exploratory findings of the data as it related to the impact socio-demographic variables had on retention of non-traditional students.

Summary and Interpretations

In this study, the target population consisted of a convenience sample of 95 freshmen students who enrolled in the University during the first month of the summer semester and the first month of the fall semester. All incoming degree-seeking freshmen students were randomly assigned to the experimental or to the control groups during the process of registration at the time of enrollment. Table 5-1 shows the summary of the classes by name, whether it was an experimental group or control group, and the number of students assigned to each class.

Table 5-1

Experimental and Control Groups by Class Name

Class	Type of Class	Frequency	Day/Night
Psychology	Experimental (AI + SI)	17	Day
Strategies for Success	Experimental (AI)	16	Day
Psychology	Experimental (AI)	16	Night
Strategies for Success	Experimental (AI + SI)	14	Night
Intro to Computers	Control	17	Day
Intro to Computers	Control	15	Night

(N=95)

Tinto's (1987) theory is based on the premise that academic and social integration of college students will enhance the chances of students staying in school. This study examined the effects that academic and social integration have on retention of non-traditional students. For this research study, academic integration was measured by the students attending first year freshman courses in either the Strategies for Success or Psychology class, and social integration was measured by the number and intensity of

faculty-student mentoring meetings, including academic advising. This study addressed four research questions, which can be paraphrased as (1) whether there was a relationship between academic and social integration and retention rates of non-traditional students; (2) whether there was a relationship between academic integration and retention rates of non-traditional students; (3) whether there was a relationship between Day and Night students and retention rates; and (4) whether there was a relationship between socio-demographic, academic and social integration and retention rates of non-traditional students.

Statistically, the study failed to confirm Hypotheses 1, 3, and 4.

H_1: Non-traditional college students who receive academic and social integration will have a significantly higher retention rate than the non-traditional students in the control group.

H_3: Non-traditional college students who receive academic integration only will have a significantly higher retention rate than those in the control group.

H_4: There will be significant difference between Day and Night students receiving treatment and the control group.

There are two possible reasons for these results. The first reason was the small sample size in this particular study. The sample size consisted of a total of 95 participants. Once the sample was split by class and intervention, the numbers for each category were rather modest. The second reason and a confounding variable in this study is a retention strategy used at this university. All faculty members are required to call students every time students are absent. It is school policy for faculty members to call

students whenever students are absent to make sure students are fine and to let them know what their assignment is for the next day. This policy is closely aligned to the intervention in this study. Those students who received the faculty-student mentoring as part of the intervention received either phone calls, e-mails, or met on a weekly basis with the faculty-mentor to discuss students' progress or simply to share experiences about school. Having faculty members call students when they are absent provides students with that special attention. Students might have gotten accustomed to hearing from their instructor either because they were absent, which was part of the school policy or got used to hearing from the faculty mentor, which was part of the intervention. The intensity of the treatment could also be made higher; thereby, making the treatment truly different from the already established protocol of the University if this study were to be repeated. It would be interesting to apply this model in a large state university setting where faculty members do not call their students to see if there would be an impact on student retention.

H_2: Non-traditional college students who receive academic and social integration will have a significantly higher retention rate than the non-traditional students who receive academic integration only.

Even though the study failed to statistically confirm results, data analysis shows that the students who received the intervention were retained at higher levels than those students who received academic integration only. The fact that faculty members at this university take the time to call students every time students are absent to make sure the students are fine and to let them know what their assignment is for the next day added

credence to the social integration. This policy is closely aligned to the faculty-student mentoring intervention in this study for social integration.

H5: There is a relationship between socio-demographic, academic, and social integration and the rate of retention of non-traditional students.

For this study, the explored student socio-demographic characteristics were gathered through the means of the socio-demographic profile survey that was completed by all the students who participated in this study. The research found that four factors, student's age group, native language spoken at home, parents' educational level, and the number of hours the students worked daily, were constant predictors that impact student retention. Age group was a significant factor related to persistence at the .027 level. The average student age at the university was 24. Non-traditional students or adult learners are typically 25 years or older, may have children, may be married or may be single parents, work full or part-time jobs and may be the sole supporters of a family (King, Anderson & Corrigan, 2003). As such, these non-traditional students were balancing multiple life roles. Summer (2003) indicates that the older the student, the higher the chances of withdrawing from school.

The second significant factor related to persistence was the student's native language spoken at home and its significance was at the .059 level. English came in as the first language spoken at home for 65.3% of the student population. When English is the student's second language, it adds one more hurdle for the student to overcome in addition to balancing multiple responsibilities in the student's daily life.

The third significant factor related to persistence was the parents' educational level. The father's educational level had significance on retention at the .014 level. The mother's educational level had significance on retention at the .022 level. Pascarella et al. found that on average, "first generation students in community colleges have a somewhat different set of experiences than their peers and completed fewer credit hours; studied less; took fewer courses in the natural sciences, mathematics, and the arts and humanities and achieved lower grades" (2003, p. 425).

The fourth and last constant predictor that this research study found as impacting student retention was the number of hours a student worked on a daily basis. Its significance was at the .042 level. As non-traditional students are trying to balance multiple responsibilities such as school, family and work, and the more hours students spend at work, the less time they have available to study.

Practical Implications

There are two implications derived from this study. The first implication of this study indicates that social integration is paramount in the student's decision to stay in school. Even though the study failed to statistically confirm results for Hypothesis 2: Non-traditional college students who receive academic and social integration will have a significantly higher retention rate than the non-traditional students who receive academic integration only, Chi-Square test results were approaching significance, $\chi^2(1, N = 63) = 1.176$, $p = .278$ for the day group. The fact that faculty members at this university take the time to call students every time they are absent to make sure the students are fine and to let them know what their assignment is for the next day adds credence to the

importance of social integration. This policy is closely aligned to the faculty-student mentoring intervention in this study for social integration. These faculty members are providing students with that special attention and special touch only a small private school can provide. The environmental influence, according to Bean and Metzner (1985), is more important than the academic variables for non-traditional students. There is a strong correlation between environmental and academic variables for staying in school. When these two are high, students tend to stay in school. When these variables are low, the chances of the student leaving school tend to be higher (Bean & Metzner, 1985).

The second implication of this study indicates that certain retention strategies could be set in place to help those students identified with specific socio-demographic characteristics in pre-enrollment data. The research found that four factors, student's age group, native language spoken at home, parents' educational level, and the number of hours the students worked daily, were constant predictors that impact student retention. These variables appeared to have a significant impact on retention. Astin (1975) stated that the ability to estimate students' chances of dropping out of school on the basis of background characteristics is of potential value to the university.

Conclusions

1. Social integration is paramount in the student's decision to stay in school. The fact that faculty members at this university take the time to call students every time students are absent to make sure the students are fine and to let them know what their assignment is for the next day adds credence to the

value of social integration. This policy is closely aligned to the intervention in this study, which was social integration.

2. The research found that student's age group is a constant predictor that impacts student retention. This study supported King, Anderson & Corrigan's (2003) and Summer's (2003) findings.

3. The research found that student's native language spoken at home is a constant predictor that impacts student retention.

4. The research found that student's parents' educational level is a constant predictor that impacts retention. This study supported Pascarella et al.'s (2003) findings.

5. The research found that the number of hours the student worked daily is a constant predictor that impacts retention.

Limitations

1. The fact that it is a policy at this university for faculty members to call students every time students are absent is closely aligned with the intervention. This may have resulted in weaker findings for this study than if it had been conducted it at a traditional university.

2. The sample size was small for the analysis of the data, N=95.

3. Student enrollment limited the sample size.

4. The small sample size limited the generalizability of the results.

Recommendations for Future Study

The results of this study can be used as baseline for future studies. Based on the interpretation and conclusions in this study, the following recommendations for future studies would contribute further information to the study of student retention.

1. This retention model should be studied using a larger sample size.
2. This retention model should be studied using a more intensive intervention; thereby, making the treatment truly different from the already established protocol of the University.
3. This study should be replicated at another college or university to assess model impact.
4. The four constant predictors of retention found in this study—students' age, native language, parents' educational level and the number of hours students work on a daily basis—should be studied more closely to identify at-risk students and direct them to academic services to prevent students from withdrawing prematurely from school.

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Appendix A

Part I - Student Demographic Profile

Part II - Institutional Integration Scale

Student Demographic Profile

Student ID #_____**Class**_____ **Date**: _____

Directions: Please circle the appropriate choice that best describes you. This information will be kept **confidential**. Thank you for taking part of this survey.

1) Age group: **1** = 18 – 21
2 = 22 – 30
3 = 31 – 40
4 = 41 – 50
5 = over 51

2) Gender: **1** = male
2 = female

3) Race and Ethnicity: **1** = White
2 = African American
3 = Hispanic
4 = Other

4) Marital Status: **1** = single
2 = married
3 = single head of household
4 = divorced
5 = separated

5) Household income per year: **1** = 0 - 20,000
2 = $21,000 - $40,000
3 = 41,000-60,000
4 = $61,000 - $80,000
5 = More than $80,000

6) Number of children living at home? **1** = One child
2 = Two children
3 = Three or more
4 = No children

7) English is my First language **1** = Yes
2 = No

8) Native language spoken in the home? **1** = English
2 = Spanish
3 = French
4 = Creole
5 = Other

9) Report the highest level of education attained by each of your parents:

Father:	**1** = Middle School	Mother:	**1** = Middle School
	2 = High School		**2** = High School
	3 = College		**3** = College
	4 = Graduate School		**4** = Graduate School

10) How much time of your day is devoted to family responsibilities?

1 = 1- 2 hours a day
2 = 3 - 4 hours a day
3 = 5 - 6 hours
4 = over 6 hrs

11) Do you have job responsibilities? **1** = Yes
2 = No

12) If you answered "Yes" to question #11, how much time of your day is devoted to job responsibilities?

1 = 1 - 2 hours a day
2 = 2 - 4 hours a day
3 = 4 - 6 hours
4 = over 8 hrs a day

13) How much time do you spend "studying" **every week**? **1** = 1- 2 hours
2 = 3 - 4 hours
3 = 5 - 6 hours
4 = over 6 hours a day

14) How much "leisure" time do you have **every week**? **1** = None
2 = 1 - 4 hours
3 = 4 - 8 hours
4 = Over 8 hours per week

Institutional Integration Scale

Student ID # _____ Date _____

Student Experiences

Following is a list of statements characterizing various aspects of academic and social life at this university. Using the scale to the right of the statements, please indicate the extent of your agreement or disagreement with each statement, as it applies to your experience during the past few months by circling the appropriate number. Please circle ONLY ONE number for each statement.

	So far at this University:	Strongly Agree	Somewhat Agree	Not Sure	Somewhat Disagree	Strongly Disagree
Q1	Most of my courses have been intellectually stimulating.	5	4	3	2	1
Q2	I am satisfied with my academic experience at this University.	5	4	3	2	1
Q3	I am more likely to attend a cultural event (e.g., a concert, lecture, or art show) now compared to few months ago.	5	4	3	2	1
Q4	I am satisfied with the extent of my intellectual development.	5	4	3	2	1
Q5	In addition to required reading assignments, I read many of the recommended books in my courses.	5	4	3	2	1
Q6	My interest in ideas and intellectual matters has increased since starting classes.	5	4	3	2	1
Q7	I have an idea about what I want to major in.	5	4	3	2	1
Q8	This year my academic experience has positively influenced my intellectual growth and interest in ideas.	5	4	3	2	1
Q9	Getting good grades is important to me.	5	4	3	2	1
Q10	I have performed academically as well as I anticipated.	5	4	3	2	1
Q11	My interpersonal relationships with students have positively influenced my intellectual growth and interest in ideas.	5	4	3	2	1
Q12	I have developed close personal relationships with other students.	5	4	3	2	1
Q13	The student friendships I have developed have been personally satisfying.	5	4	3	2	1
Q14	My personal relationships with other students have positively influenced my personal growth, values, and attitudes.	5	4	3	2	1
Q15	It has been easy for me to meet and make friends with students.	5	4	3	2	1
Q16	I am satisfied with my dating relationships.	5	4	3	2	1
Q17	Many students I know would be willing to listen and help me if I had a personal problem	5	4	3	2	1
Q18	Most students at this University have values and attitudes similar to mine.	5	4	3	2	1

5= Agree Strongly, 4=Agree Somewhat, 3= Not Sure, 2=Disagree Somewhat, 1=Disagree Strongly

Q19	I am satisfied with the opportunities to participate in organized extra-curricular activities at this University.	5	4	3	2	1
Q20	I am happy with my living /residence arrangement.	5	4	3	2	1
Q21	I am satisfied with my opportunities to meet and interact informally with faculty members	5	4	3	2	1
Q22	Many faculty members I have had contact with are willing to spend time outside of class to discuss issues of interest and importance to students.	5	4	3	2	1
Q23	I have developed a close, personal relationship with at least one faculty member.	5	4	3	2	1
Q24	My non-classroom interactions with faculty members have positively influenced my intellectual growth and interest in ideas.	5	4	3	2	1
Q25	My non-classroom interactions with faculty members have positively influenced my personal growth, values, and attitudes.	5	4	3	2	1
Q26	My non-classroom interactions with faculty members have positively influenced my career goals and aspirations.	5	4	3	2	1
Q27	Many faculty members I have had contact with are genuinely outstanding or superior teachers.	5	4	3	2	1
Q28	Many faculty members I have had contact with are genuinely interested in students.	5	4	3	2	1
Q29	Many faculty members I have had contact with are genuinely interested in teaching.	5	4	3	2	1
Q30	Many faculty members I have had contact with are interested in helping students grow in more than just academic areas.	5	4	3	2	1
Q31	It is important to me to graduate from college.	5	4	3	2	1
Q32	It is important to me to graduate from this University.	5	4	3	2	1
Q33	I am confident that I made the right decision in choosing to attend this University.	5	4	3	2	1
Q34	I will most likely register at this University next fall.	5	4	3	2	1

From "*Institutional Integration Scale* (2004)". Used with permission of Dr. French.

Appendix B

Entry-Baseline Institutional/Academic Records and Follow-up GPA and Retention

Entry-Baseline Institutional/Academic Records and Follow-up GPA and Retention

Tracking

1. **Student's ID #**
2. **Admission Term (Summer I or Fall I semesters)**

Groups

1. **Experimental Strategies for Success or Psychology course including Faculty-Student Mentoring = I**
2. **Experimental Strategies for Success or Psychology course = II**
3. **Control Group enrolled in Introduction to Computers course = III**

Schedule

1. **Day**
2. **Evening**

Academic Characteristics

1. **High School: Diploma = 1; GED = 2**
2. **Wonderlic college entrance exam**
3. **Major**

Compare from first class, all groups:

1. **Semester GPA**
2. **Students returned following semester: Yes or No**

Appendix C

Lynn University IRB Approval to conduct study

Keiser University Approval to conduct study

Lynn University

Principal Investigator: Jannette Porta-Avalos

Project Title: Factors Influencing Retention of Non-Traditional Undergraduate College Students and Effective Retention Strategies.

IRB Project Number 2007-018:
APPLICATION AND PROTOCOL FOR REVIEW OF RESEARCH INVOLVING HUMAN SUBJECTS OF A NEW PROJECT: Request for Exempt Status__Expedited Review__Convened Full-Board_X_

IRB ACTION by the CONVENED FULL BOARD:

Date of IRB Review of Application and Research Protocol: 05/07/07

IRB ACTION: Approved X Approved w/provision(s) __ Not Approved __Other __

COMMENTS:

Consent Required: No _____Yes _X__Not Applicable _____ Written __X__ Signed X

Consent forms must bear the research protocol expiration date of __05/07/08.

Application to Continue/Renew including an updated consent, is due:

1) For a Convened Full-Board Review, two months prior to the due date for renewal X_
2) For an Expedited IRB Review, one month prior to the due date for renewal __
3) For review of research with exempt status, one month prior to the due date for renewal __

Name of IRB Chair Farideh Farazmand

Signature of IRB Chair [redacted] Date: __05/07/07

Cc. Dr. De Veau

Institutional Review Board for the Protection of Human Subjects
Lynn University
3601 N. Military Trail Boca Raton, Florida 33431

Lynn University

THIS DOCUMENT SHALL ONLY BE USED TO PROVIDE AUTHORIZATION FOR VOLUNTARY CONSENT

PROJECT TITLE: Factors Influencing Retention of Non-Traditional Undergraduate Students and Effective Retention Strategies.

Project IRB Number: 2007-018 Lynn University 3601 N. Military Trail Boca Raton, Florida 33431

I, Jannette Porta-Avalos, am a doctoral student at Lynn University. I am studying Global Leadership, with a specialization in Education. One of my degree requirements is to conduct a research study.

DIRECTIONS FOR THE PARTICIPANT:

You are being asked to participate in my research study. Please read this carefully. This form provides you with information about the study. The Principal Investigator (Jannette Porta-Avalos) will answer all of your questions. Ask questions about anything you don't understand before deciding whether or not to participate. You are free to ask questions at any time before, during, or after your participation in this study. Your participation is entirely voluntary and you can refuse to participate without penalty or loss of benefits to which you are otherwise entitled. You acknowledge that you are at least 18 years of age, and that you do not have medical problems or language or educational barriers that precludes understanding of explanations contained in this authorization for voluntary consent.

PURPOSE OF THIS RESEARCH STUDY: The purpose of this research is to study the effects that academic and social integration have on non-traditional student retention. This study is about the factors that influence students to stay in college and graduate despite obstacles that may stand in the way of graduation. There will be approximately 120 students invited to participate in this study. The students who will be invited to participate in this study are freshmen students entering Keiser University during the 2007 summer semester.

PROCEDURES: If you agree to participate after reading this consent form, you will be asked to fill out two surveys. The first one is a Socio-Demographic Profile survey. This is a 14 multiple choice questionnaire about student's characteristics and it will be completed during the first week of classes. This survey should take no longer than 10 minutes to complete. The second is the Institutional Integration survey to be completed during the last week of classes. This is a 34-question survey about your satisfaction with school, your academic progress, and interaction with classmates and instructors. These two surveys should not take more than 10 minutes each to complete. After completion of each survey, you will be asked to place your survey in an envelope provided by the investigator and this is to be returned to the investigator. Please do not write your name on the survey, only your student number. If necessary, the researcher, (Jannette Porta-Avalos), can help you in completing the surveys and will be available to answer any questions you may have. Anonymity will be maintained by having the students use their student identification number, not their names.

POSSIBLE RISKS OR DISCOMFORT: This study involves minimal risk. You may find that some of the questions are sensitive in nature. In addition, participation in this study requires a minimal amount of your time and effort.

POSSIBLE BENEFITS: There may be no direct benefit to you in participating in this research. But knowledge may be gained which may help future students attending Keiser University or any other institution of higher education and administration staff understand the factors that influence students' retention in school.

FINANCIAL CONSIDERATIONS: There is no financial compensation for your participation in this research. There are no costs to you as a result of your participation in this study.

Institutional Review Board for the Protection of Human Subjects
Lynn University
3601 N. Military Trail Boca Raton, Florida 33431

CONFIDENTIALITY: Every effort will be made to maintain confidentiality. Your identity in this study will be treated as confidential. Only the researcher (Jannette Porta-Avalos) will know who you are. While filling out the surveys, you will use your student ID (identification number). Data will be coded with that number.

Your name will not be revealed and data will be reported as "group" responses. Participation in this survey is voluntary and return of the completed survey will constitute your informed consent to participate.

The results of this study may be published in a dissertation, scientific journals or presentations at professional meetings. In addition, your privacy will be maintained in all publications or presentations resulting from this study.

All data gathered during this study, which were previously described, will be kept strictly confidential by the researcher. Data will be stored in locked files and destroyed at the end of the research. All information will be kept in strict confidence and will not be disclosed unless required by law or regulation.

RIGHT TO WITHDRAW: You are free to choose whether or not to participate in this study. There will be no penalty or loss of benefits to which you are otherwise entitled if you choose not to participate.

CONTACTS FOR QUESTIONS/ACCESS TO CONSENT FORM: Any further questions you have about this study or your participation in it, either now or any time in the future, will be answered by Jannette Porta-Avalos (Principal Investigator) who may be reached at: [redacted] and Dr. Linsley DeVeau, faculty advisor who may be reached at: [redacted]. For any questions regarding your rights as a research subject, you may call Dr. Farideh Farazmand, Chair of the Lynn University Institutional Review Board for the Protection of Human Subjects, at [redacted] If any problems arise as a result of your participation in this study, please call the Principal Investigator (Jannette Porta-Avalos) and the faculty advisor (Dr. Linsley Deveau) immediately.
A copy of this consent form will be given to you.

AUTHORIZATION FOR VOLUNTARY CONSENT:
I have read and understand this consent form. I have been given the opportunity to ask questions, and all my questions have been answered to my satisfaction. I have been assured that any future questions that may arise will be answered. I understand that all aspects of this project will be carried out in the strictest of confidence, and in a manner in which my rights as a human subject are protected. I have been informed of the risks and benefits. I have been informed in advance as to what my task(s) will be and what procedures will be followed.

I voluntarily choose to participate. I know that I can withdraw this consent to participate at any time without penalty or prejudice. I understand that by signing this form I have not waived any of my legal rights. I further understand that nothing in this consent form is intended to replace any applicable Federal, state, or local laws. I understand that I will receive a copy of this form.

_____
Participant's printed name

_____ _____
Participant's signature Date

INVESTIGATOR'S AFFIDAVIT: I hereby certify that a written explanation of the nature of the above project has been provided to the person participating in this project. A copy of the written documentation provided is attached hereto. By the person's consent to voluntary participate in this study, the person has represented that he/she is at least 18 years of age, and that he/she does not have a medical problem or language or educational barrier that precludes his/her understanding of my explanation. I hereby certify that to the best of my knowledge the person who is signing this consent form understands clearly the nature, demands, benefits, and risks involved in his/her participation and his/her signature is legally valid.

[redacted]
Signature of Investigator

Date of IRB Approval: 05/07/07

[redacted]

Institutional Review Board for the Protection of Human Subjects
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February 13, 2007

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1500 NW 49th Street
Ft. Lauderdale, FL 33309

Dear Ms. Porta-Avalos:

We have reviewed your research proposal entitled, *Factors Influencing Retention of Non-Traditional Undergraduate Students and Effective Retention Strategies,* and approve your research prospectus for use at Keiser University. The President at your campus will oversee the coordination of this project and also be responsible for any data elements you need regarding requested student information. Before beginning your project, you must submit a copy of Lynn University's IRB approval for our institutional records.

This research has the potential to provide important information about Keiser University students. We look forward to seeing the results of this work.

Sincerely,

[redacted]

William F. Ritchie, Ph.D.
Associate Vice Chancellor, Institutional Research
Chair, Institutional Review Board

Appendix D

Permission to use the Institutional Integration Scale, *IIS*

Permission to Use the Scale

Jannette,

You are most welcome! Thank you.

Best,
Brian

-----Original Message-----
From: Jannette Porta-Avalos [mailto[redacted]
Sent: Saturday, October 07, 2006 11:16 AM
To: French, Brian F
Subject: RE: Institutional Integration Scale

Dr. French:

Thank you very much for allowing me to use your revised version of the scale. I will forward a summary of how the scale was used and the outcomes of the research. I anticipate starting implementation of my study as soon as I receive IRB approval which I hope to be early in the spring of 2007.

Thank you again, Dr. French.

Jannette

From: French, Brian F [mailto:[redacted]]
Sent: Fri 10/6/2006 11:01 AM
To: Jannette Porta-Avalos
Subject: RE: Institutional Integration Scale

Jannette,

I do not have a problem with you using the revised version of the scale.

I just ask you send me some time of summary of how it was used and the outcomes of the research when you finish. I like to track how it is used.

I wish you success with your research.

Best,

Brian French

****
Brian F. French
Assistant Professor
Co-Director, Purdue University Psychometric Instruction/Investigation

Laboratory
Beering Hall, College of Education, Purdue University
West Lafayette, Indiana 47907-2098
E-mail: [redacted]
Voice: [redacted] Fax: [redacted]
www.edst.purdue.edu/french http://pupil.education.purdue.edu
****

-----Original Message-----
From: Jannette Porta-Avalos [redacted]
Sent: Monday, October 02, 2006 3:07 PM
To: French, Brian F
Subject: RE: Institutional Integration Scale
Importance: High

Dr. French,

Thank you again for your time and assistance with my study. I would appreciate your permission to use your scale. I have put together a formal letter asking for your permission. I hope you accept. Thank you, again.

Jannette

From: French, Brian F [redacted]
Sent: Thu 9/28/2006 10:30 PM
To: Jannette Porta-Avalos
Subject: RE: Institutional Integration Scale

Jannette,

Thank you for contacting me and for interest in my work.
I have attached a copy of the scale that I used in my study. I wish you success with your research.

Best,
Brian French

****
Brian F. French
Assistant Professor
Co-Director, Purdue University Psychometric Investigation Laboratory
Beering Hall, College of Education, Purdue University
West Lafayette, Indiana 47907-2098
E-mail: [redacted]
Voice: [redacted] Fax: [redacted]
www.edst.purdue.edu/french http://pupil.education.purdue.edu
****

-----Original Message-----
From: Jannette Porta-Avalos [redacted]
Sent: Thursday, September 28, 2006 10:18 PM
To: French, Brian F
Subject: Institutional Integration Scale
Importance: High

Dr. French:

It is a pleasure for me to be able to communicate with you. I am a doctoral student at Lynn University, and I am in the process of writing my dissertation. My topic is: Factors influencing retention of non-traditional undergraduate students and effective retention strategies. I have found the work you have done extremely important and interesting especially as it pertains to the area of student persistence. I am in the process of developing my research methodology, but I need a copy of the actual Institutional Integration Scale you used to measure the reliability and validity of this instrument. I would be forever indebted to you if you could help me locate this scale or point me in the right direction.

Thank you in advance for your time and consideration.

Sincerely,

Jannette Porta-Avalos

Appendix E

Keiser University Academic Advising Form

KEISER COLLEGE
FORT LAUDERDALE CAMPUS
Academic Advisement Form

Student: _____ **Date:**

Major:

Topics Reviewed Checklist: (mark any that apply)

REQUIRED:				
	From "Student" Page C2K:			**From "Schedule" Page C2K:**
☒	Provide ID & PIN number		☒	Make sure F,W,WNA courses have been rescheduled
☒	Note Module		☒	Discuss Assessment exams if nec.
☒	Check Status for Probation		☒	Complete schedule checklist
☒	Verify contact info; note any changes below		☐	Discuss resume / job search if app.
	From "Final Grades" Page C2K:		**OPTIONAL:**	
☒	Note any classes with W, WNA, F		☐	Dress Code
☒	Check GPA		☐	Behavior
☒	Discuss Probation / GPA if nec		☐	Tutoring
☐	Refer to Student Services		☐	Career Goals
☒	Check W's for possible WNA		☐	Other Majors
☒	Check off completed courses		☐	SAP
☐	Check for Transfer credits		☐	Attendance

NOTES: (Discussion, any follow-up needed)

Address: _____ (Street) _____ (City, State Zip)

E-mail:_____

Home #:_____ **Work #:**_____ **Cell #:** _____

Student Signature: _____ **Date:** _____

Adviser Signature: _____ **Date:** _____